THE BUILDER

Incorporating

ARCHITECTURE & THE BRITISH ARCHITECT

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THIS WEEK'S NEWS

THE ANNUAL BANQUET of the R.I.B.A. is to be held once more. p. 744

AN OFFER to take the initial steps to establish an Institute of Estimators is made by a correspondent. p. 746

A STUDY of the incidence of fires in post-war houses has revealed that there have been proportionately four times as many serious fires in permanent non-traditional houses as in traditional types, Mr. Eric Bird told the R.I.B.A. on Tuesday. p. 761

A RECENT SURVEY has shown that on only 28 per cent. of building sites in England and Wales are incentive schemes being operated. p. 766

LICENCES for private builders up to 50 per cent. of their allocations may be granted by local authorities, Mr. Macmillan stated in Parliament on Tuesday. p. 769

THE INDUSTRY'S PLAN FOR BUILDING

THE immediate policy of the Government in regard to increasing building output, and particularly house production, is now becoming defined. Statements made within the last fortnight by the Minister of Works and the Parliamentary Secretary to the Ministry of Housing and Local Government make it clear that the intention is to invite the component parts of the building industry to state their requirements for achieving a higher output; the Ministers will then ask the Cabinet to give such additional help or facilities as may be desirable, and possible. When these are granted, the onus will be laid on the industry rapidly and economically to implement the programme. A first opportunity to show what private initiative can do in the housing field already is given in the statement on housing licence ratios made by the Minister of Housing and Local Government on Tuesday night.

This change from policy imposed from above—a process to which it has become inured since 1939—finds the building industry gratified but a little embarrassed, as might be a father who, hoping for a boy, instead finds himself presented with twin girls ; no doubt he will learn to love them but at the moment he is a little bewildered. Meanwhile, sympathy is mingled with the congratulations. If, as the Minister of Works suggested in opening the Building Exhibition, the industry is a little afraid of freedom, as well it might be after being virtually imprisoned for the past 12 years, it must lose no time in pulling itself together ; the time ahead is likely to be testing.

At this moment building needs a united voice which can clearly and unmistakably state its needs and define its policy. It is now of little use bewailing that Raymond Unwin's great conception of a Building Industries National Council was allowed to die for lack of support and sustenance. We must get along without it, and find some other method of concerting the varying requirements into a workable plan, which can be laid with authority before the Government.

There would seem to be two ways of going to work on this: either that each branch of the industry should prepare and present its own claims or that a conference should be called representing all sides, and that one coherent, objective plan be submitted. Of these alternatives the former is undoubtedly the simpler ; whether it would be as effective as could be a unified plan is open to question. "Everyone is necessary and none can be done without," said Mr. Arthur Kenyon, in a recent address. "The only trouble is that we are not working as a team, we are working as individuals pulling in different directions." He might have added that there is also a tendency for the various sides to blame the others for certain failings, the architects to lay responsibility on multiplicity of controls, the builders to plead insufficiency of information from the architects in the form of incomplete working drawings, and both to unite in complaining of shortages of materials and of output by the operatives.

All sides, no doubt, have some justice in their complaints, but we suggest that what the Minister is looking for is not a series of alibis but a constructive plan. How is this plan to come into being ? In the address to which reference has been made, Mr. Kenyon proposed a conference of builders, sub-contractors, operatives, architects, engineers, surveyors and quantity surveyors (to whom we would add the materials manufacturers), which "should get together and see if some united effort could be made towards a higher understanding of the problems of getting the building industry on to a higher plane with greater efficiency." We endorse this proposal, seeing in it the only way to put the industry's own house in order as a preliminary to drawing up a plan of action.

We suggest that each branch of the industry should come to the conference, if it can be arranged, having restudied the recommendations of the Working Party Report with the definite intention of putting its own affairs in shape. Those recommendations are summarised elsewhere in this issue, and should give food for thought. For instance, have the architects really impressed on their members the need for furnishing full working drawings from which bills of quantities can be prepared ? Do all builders, before starting work on a site, draw up a programme of work ? Are they making a wholehearted effort to increase production by incentive payment schemes ? (The evidence of the Ministry of Works survey on the subject, published this week, would seem to show not.) Is proper use of research being made ? Are the operatives using mechanical tools towards greater production or merely to give the same production with less effort? Are they plainly hearing from their leaders of the need to do a full day's work for a fair day's wage ? These are some of the

questions to which the various sides must address themselves.

Finally, if such a conference is to be called, who shall summon it ? Surely the Royal Institute of British Architects! Mr. Graham Henderson, the president, in his inaugural address, has recently restated the architect's prescriptive right to be the head of the building operation. "To put it very bluntly," he said, "if there is to be a team, we must be the leaders of that team." The urgent need now is for the building industry to form itself into a cohesive team ; no longer can it afford to remain a collection of isolated units. The need and the opportunity are now here. Let both be grasped, unless the building trades are reconciled to seeing their future as a directed industry.

FIRE PROTECTION AND THE ARCHITECT

"ARCHITECTS have always been aware that they have a primary responsibility for the fire safety of the buildings they design." With this sentence, Mr. Eric Bird opened his paper on "Fire Protection : The Architect's Responsibility," at the R.I.B.A., on Tuesday evening last, November 27. Later on in his paper, which is reported elsewhere in this issue, he compared this "awareness" in its present form amongst architects rather unfavourably with that during the latter half of the nineteenth century, when—following the Tooley-street conflagration in 1861, and the Exeter Theatre fire of 1887, in which 200 persons lost their lives—public interest became aroused and architects took their proper place in a "concerted move towards improvements."

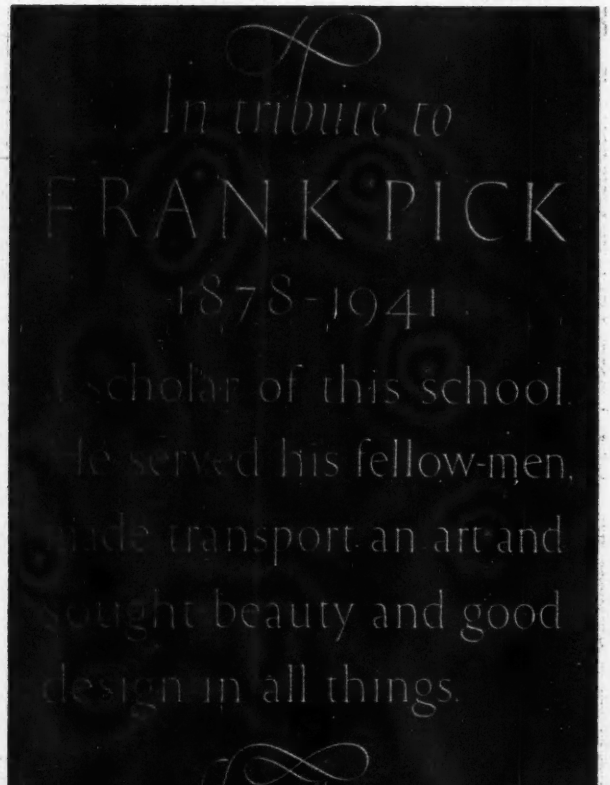
Mr. Bird briefly described the historical background to his subject, in which the Fire Offices' Committee, formed in 1868, and the British Fire Prevention Committee, formed in 1899, took an initial and vital part, resulting in much direct influence on legislation. Following the publication in 1932 of the British Standard Definitions for Fire-resistance, etc., the Fire Offices' Committee in 1935 opened their fire testing station at Elstree. To Mr. Bird, this step is historically of the utmost importance, for where previously the development of fire prevention had been purely a matter of empirical determination, the new testing station opened up the possibilities of scientific investigation into the problems involved. During the war, the place occupied by fire-raising demanded the closest co-operation between the Government Departments concerned and the Fire Offices' Committee, with the eventual result that in 1946 the work of research was reorganised under the main control of the two bodies under the new name of the "Joint Fire Research Organisation."

The work of research, commenced in the earlier days at Elstree, into the fire testing of structural elements of a building, such as columns, beams, walls and floors, became more standardised and following the "determination of what constituted an average fire," it became possible to make comparison between the behaviour of the elements themselves in relation to one another. Thus, it was feasible to grade building elements according to ability to withstand the "average fire." The practical use of such gradings was embodied in the Post War Building Study, number 20, "Fire Grading of Buildings," Part 1, from which Mr. Bird quoted fairly freely.

But, according to Mr. Bird, the behaviour of the building elements in themselves is only one side of the story, for "the fuel content arising from the occupancy may be, and usually is, of much greater importance. The substances comprising most occupancies are commonly both easier to ignite and contain a greater bulk of combustible material than do the more usual forms of structure." Methods have been established where it is now possible to evaluate with tolerable accuracy the "fire load" within the building according to the type of occupancy in terms of B.Th.U.s per square foot of floor area. Thus, the fire load may in itself suggest the degree of protection required for the structural elements to be used. But again, this may be applied one stage further, for the "proper use of fire-resisting construction is to confine the fire, and prevent it spreading throughout the building or to adjacent buildings."

Such restriction or control on the behaviour of fire demands an understanding of such matters as "fire compartmentation," "flue effects" and the many other aspects of planning which are well within the province of both the architect and the town planner. In fact, Mr. Bird expressed the opinion that the attitude of mind of the architect, through his ability "to see all round a problem," made him eminently suited for tackling the problems of fire protection and public safety. He did, however, complain quite bitterly that architects generally "seem content to apply existing regulations, though they frequently grumble at them," and he contended that something more than the mere understanding of the rudiments of the problems is necessary in order that "they can argue with the local authority official on his own ground," and thus "avoid the risks which one sometimes sees incurred with new materials and forms of construction, and most of all they can make a positive contribution to advance in fire protection technique." How important such considerations should be was emphasised by quoting figures concerning fires in dwelling houses since the war. It was stated that there "have been proportionately four times as many serious fires in permanent non-traditional houses (of all types) as in traditional houses ; in other words, the pre-fab has been, so far and on the average, four times as hazardous as the traditional house."

Two statements in a somewhat apologetic vein were made by the author in his paper; one was to the architectural profession, and especially teachers of architecture, for the introduction of "yet another technique affecting building and demanding a place in the all over-crowded curriculum of training"; and the other for resisting the temptation to include examples, both sensational and horrifying, in order to point a moral. Mr. Bird need have no such misgivings ; any scourge such as this, which, in spite of a highly developed and technically efficient fire-fighting organisation, destroys annually more than £20 million worth of buildings and contents, is a serious enough matter to demand our most earnest attention.



This tablet to the memory of the late Mr. Frank Pick, vice-chairman of London Transport from 1933 to 1940, was unveiled by Lord Latham, chairman of the London Transport Executive, at St. Peter's School, York, on November 23, where Mr. Pick was once a scholar. The tablet is of Welsh slate, and has been cut by Mr. Reynolds Stone.

Working Party Report on Building

A BASIS FOR A PLAN OF ACTION

*OUR leading article this week proposes, as the best means of meeting the Government's call for a statement of the industry's requirements, a conference of all branches of the building industry ; and suggests that as a brief it should re-study the Working Party Report on Building. The summary of conclusions and recommendations made in that *report is reprinted below.*—EDITOR.

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Our principal conclusions and recommendations are as follows :—

PRODUCTIVE EFFICIENCY

(1) During 1936 and 1947 productive efficiency in the building industry was about two-thirds of its pre-war level ; by the end of 1948 it was about three-quarters ; there are indications of a further improvement. The combined effect of lower productivity, higher wage rates and higher costs of materials was that building costs generally throughout 1948 and 1949 were about two and a half times those of 1939.

(2) The fall in the level of productive efficiency was due to the great reduction in the building labour force during the war, its rapid increase to almost the pre-war level immediately afterwards, the dislocation of managements during the war, the launching of a building programme greatly in excess of existing resources, the subsequent changes in this programme, the delays and uncertainties owing to shortages and controls, the compulsory use of untried materials, and the inflationary condition of the country's economy. Most of these are temporary and efficiency is slowly recovering ; there are, however, two new factors which affect efficiency : " full employment " and planning controls.

FULL EMPLOYMENT

(3) Full employment means the absence of the large reserve of unemployed labour previously available ; the industry must adjust itself to this.

BUILDING PROGRAMMES AND CONTROLS

(4) Existing arrangements for issue of licences and permits cause delays and uncertainties which are inimical to efficiency and make pre-planning of jobs impossible ; a determined effort must be made to remedy this. Frequent modifications of the general building programme disorganise the industry.

CONDITIONS FOR IMPROVING EFFICIENCY

(5) To raise productive efficiency above its pre-war level :—

(*a*) All concerned in building operations should co-operate fully in everything that helps to improve efficiency, and to extend the advantageous use of the appliances, methods and materials which scientific and technical advances place at their disposal.

(*b*) Building operations of any size must be completely pre-planned.

(*c*) Building research must be efficiently organised and the results made widely known.

LAYOUT AND PERSONNEL OF THE BUILDING INDUSTRY

(6) The existing layout of building concerns provides the necessary flexibility and variety of capacities required by building operations ; no change in the craft basis is suggested, though greater interchange between crafts would be of advantage. For the personnel of the industry the need is to develop training schemes for all grades. Craft apprenticeship under proper indentures has been encouraged though much remains to be done. The selection and training of foremen require further attention. University courses for future bui ding managers need to be extended and coupled with adequate pay and prospects for those who have successfully completed their courses.

(7) In view of the control which the architect exercises over building operations, it is important that his training should give him adequate knowledge of the practical aspects of building ; he should be prepared to adopt new materials and methods wherever appropriate.

(8) Government Departments which control much building work have a special responsibility in regard to efficient practice ; to ensure that full advantage is taken of new developments, technical advice on building matters should be provided by one technical department.

REGISTRATION OF BUILDERS

(9) No general scheme of qualitative registration is recommended to the industry; the present registration of employers should continue for statistical purposes ; some form of registration in the plumbing and electrical trades is desirable ; the National House-builders' Registration Council performs a useful function.

DIRECT LABOUR ORGANISATIONS

(10) The conditions under which direct labour departments of Local Authorities should operate are laid down in satisfactory terms in a memorandum [shown as an appendix to the Report] on the subject issued by the Ministry of Health and should be adhered to.

CONTRACT ARRANGEMENTS IN THE INDUSTRY

(11) Before a contract is let the contractor should be furnished with full working drawings from which bills of quantities can be prepared.

(12) More general adherence to a standard form of building contract is required ; Government Departments should adopt a standard form.

(13) The number of nominated sub-contractors should not be unnecessarily multiplied. When nominated sub-contractors are employed they should if possible be selected after competition, and, save in certain special cases, design should be by a consultant firm.

THE MANAGEMENT OF BUILDING OPERATIONS

(14) Before starting work on a site the builder, with full knowledge of the operation he is going to undertake, should draw up a programme of work. Site organisation should then be carefully planned as regards supply of materials and tools, correct balance of operations and labour, and in all other respects : the progress of work should be compared periodically with the programme and necessary adjustments made. Work Studies can assist management particularly by reducing the amount of wasted time.

INCENTIVE SCHEMES

(15) Incentive payments are essential if output is to be adequately increased.

JOINT PRODUCTION COMMITTEES

(16) Joint production committees are valuable.

SAFETY AND WELFARE

(17) Adequate safety and welfare facilities are an important means of securing production ; a standard is now prescribed by the industrial Code of Welfare and by a Factory Act Regulation.

COSTING SYSTEMS

(18) Adequate costing is an essential factor in management, in promoting efficiency in the use of labour, materials and plant, in controlling overheads, and in providing information for tendering. A uniform costing system is impracticable ; a report on costing systems is printed in Appendix D.

THE MATERIALS AND METHODS EMPLOYED

(19) The distribution of building materials and components has recently been examined by a Committee of Inquiry appointed by the Minister of Works. More economical use of building materials is essential if costs are to be lowered.

(20) Greater use of British Standard Specifications should be made. There is scope for further standardisation.

(21) Codes of Practice are valuable.

MECHANICAL AIDS

(22) Mechanical aids appear to be used where available and profitable. It would be of advantage if the service of plant hiring firms could be extended. Greater use of power driven tools on site is desirable.

BYE-LAWS

(23) Model Series of Building Bye-laws should be kept up to date and promptly amended : they should take account of British Standard Specifications and Codes of Practice.

RESEARCH

(24) In the selection of subjects for research representatives of the industry should be fully consulted and given opportunities for making suggestions. Actual conduct of research should be carried out in the main by organisations of primarily scientific character. Effective arrangements should be made to present research results so that they can be readily applied in practice. The Ministry of Works has special responsibilities in the field of research.

BUILDING FINANCE

(25) The industry appears generally satisfied with existing arrangements for financing the builder ; prompt payment by the building owner of sums due is essential. A difficulty about performance bonds is at present the subject of negotiation. The question of securing to nominated sub-contractors payment due to them should be further examined by the parties concerned.

THE BUILDING INDUSTRY IN OTHER COUNTRIES

(26) The building industry can profit greatly from the visit to the U.S.A. of the building team sponsored by the Anglo-American Council on Productivity.

* Working Party Report : Building. H.M. Stationery Offices. 2s. 6d. net.

HOUSING POLICY

AN IMPORTANT STATEMENT on the future issue of licences was made in the House of Commons on Tuesday night by Mr. Macmillan. A full report is on page 769. Briefly, local authorities are given discretion to issue up to 50 per cent. of licences for houses built by private enterprise, for sale or for rent. Local authorities are to be encouraged to follow the Ministry specimen designs (some of which were shown in *The Builder* for November 16) for houses which maintain Dudley standards of living space but are of smaller superficial area.

NOTES & NEWS

ADVISER ON HOUSING

MR. MACMILLAN, Minister of Housing and Local Government, announced on Wednesday that he has invited Sir Percy Mills to act as adviser to the Minister on housing matters. Sir Percy will be responsible for increasing the tempo and hastening the production of houses. He is Chairman of Messrs. W. and T. Avery, and is also Chairman of the National Research Development Corporation.

R.I.B.A. BANQUET AGAIN

IT IS GOOD to hear that the R.I.B.A. is once again to have a banquet; this will be held at a West-end hotel, early next year. A variety of reasons contributed to the war-time decision to abandon this practice, whose resumption will be widely welcomed. A banquet serves at least two important functions—it enables the Institute and its members to return hospitality extended by other Institutions, and it offers a platform for pronouncements of public interest for which no effective alternative offers. The annual reception will also be held, thus giving opportunity for the younger members to take part in the Institute's lighter side.

R.I.B.A. MEMBERSHIP

THE R.I.B.A. Kalendar for 1951-52 just issued, (price 10s.), shows that the Institute continues to make solid progress. Total membership is now 18,861, as against 17,422 last year, an increase of 1,439. Comparable figures of the various classes of member (last year's figures in brackets) are as follows: Fellows, 2,036 [2,018]; Associates, 8,787 [7,652]; Licentiates, 2,735 [2,814]; Retired Members, 457 [444]; Students, 4,615 [4,260]; Subscribers, 8 [8]; Hon. Fellows, 18 [19]; Hon. Associates, 97 [97]; Hon. Corresponding Members, 108 [110].

As will be seen, the increase in Fellows is comparatively small [18], but in Associates considerable (1,135), while Licentiates, as one would expect, show a decline (79). More than 10,000 of the 16,000 architects on the National Register are corporate members of the R.I.B.A.

BUILDING BYELAWS

A COMMITTEE representing local authorities and other bodies interested in building byelaws is now advising the Minister of Housing and Local Government on the revision of the Model Building Byelaws, and it is hoped that considerable progress will be made during the next few months. Meanwhile, states the Ministry in a Circular (No. 67/51) to local authorities, it becomes necessary again to postpone the date on which existing byelaws would have lapsed; it is pointed out that the Building Byelaws (Extension) Order, 1951, allows byelaws now operative to remain in force until December 31, 1952. The Ministry also draws attention to Ministry of Health Circular 105/50 on the subject.

THE ST. PAUL'S WATCH

THE DEAN OF ST. PAUL'S, Dr. W. R. Matthews, dedicated on November 25, a tablet set in the floor of St. Paul's Cathedral commemorating the work of men and women who kept watch at the cathedral during the war. The memorial was designed by the late Ernest Gillick, A.R.A.

The Dean praised the 250 volunteers—some of them famous artists, architects, and sculptors, but all of them too old for military service—who, night after night, guarded the cathedral against fire bombs, V1s, and V2s.

R.I.B.A. LIBRARY GROUP

ON December 10, at 6 p.m., Mr. John Summerson, A.R.I.B.A., will introduce to the R.I.B.A. Library Group the collection of Wren drawings recently acquired by the Institute.

CHELSEA RIVERWALL

THE CHELSEA SOCIETY has completed its review of public opinion on the Chelsea Council's proposals to rebuild the river wall between Battersea Bridge and the Cremorne Arms, and has recommended that no step should be taken to obliterate this "picturesque, useful, historic, and pleasure-giving waterfront."

COMING EVENTS

MONDAY, DECEMBER 3

ROYAL INSTITUTION OF CHARTERED SURVEYORS.—"The Rebuilding of London, 1666–1951," by Messrs. K. Marr-Johnson, F.R.I.C.S., and T. F. Reddaway, M.A., F.R.Hist.S. 12, Great George-street, S.W.1. 5.30 p.m.

THE SOCIETY FOR THE PROTECTION OF ANCIENT BUILDINGS.—"How Gothic Revival Went Wrong," by Dr. F. C. Eeles, O.B.E. 55, Great Ormond-street, W.C.1. 8 p.m.

TUESDAY, DECEMBER 4

HAMMERSMITH SCHOOL OF BUILDING AND ARTS AND CRAFTS.—Exhibition of Students Work. Lime-grove, Shepherd's Bush, W.12. 4.30 p.m.

UNIVERSITY OF LONDON.—"The New Towns and Their Problems," by Lord Beveridge, K.C.B. University of London, Russell-square, W.C.1. 5.30 p.m.

INSTITUTE OF HOUSING (LONDON AREA BRANCH).—Brains Trust meeting. Camberwell Town Hall, Peckham-road, S.E.5. 6.30 p.m.

WEDNESDAY, DECEMBER 5

JOINT COMMITTEE ON MATERIALS AND THEIR TESTING IN ASSOCIATION WITH THE INSTITUTE OF WELDING.—Symposium on Notch Bar testing. Institution of Civil Engineers, Great George-street, S.W.1. 10 a.m.

UNIVERSITY OF LONDON.—The first in a course of three lectures on "The Cathedral of Chartres," by Jean Maunoury. University College, Gower-street, W.C.1. 5.30 p.m. Other lectures on December 6 and 7.

THE REINFORCED CONCRETE ASSOCIATION.—"The design and construction of circular liquid-retaining structures in prestressed concrete," by J. W. A. Ager, B.E., A.M.I.C.E. 11, Upper Belgrave-street, S.W.1. 6 p.m.

ROYAL INSTITUTION OF CHARTERED SURVEYORS.—Ordinary General Meeting and talk on "Urban Estate Management," by G. R. Symmons, F.R.I.C.S. 12, Great George-street, S.W.1. 6 p.m.

FACULTY OF SURVEYORS OF ENGLAND AND THE FACULTY OF ARCHITECTS AND SURVEYORS (SURREY BRANCH).—Dinner to be followed by a mock arbitration. Greyhound Hotel, Sutton. 7 p.m.

ARCHITECTURAL ASSOCIATION.—Musical evening. 34–36, Bedford-square, W.C.1.

THURSDAY, DECEMBER 6

TOWN PLANNING INSTITUTE.—"Some Landscape Aspects of the Development Plan," by Mr. James W. R. Adams, F.I.L.A. Caxton Hall, Caxton-street, S.W.1. 6 p.m.

TOWN AND COUNTRY PLANNING ASSOCIATION (STUDENTS' PLANNING GROUP).—"The Future of Local Government," by Sir Malcolm Trustram Eve. 28, King-street, Covent Garden, W.C.2. 6.15 p.m.

ENGINEERS' GUILD LIMITED (METROPOLITAN BRANCH).—Films on "The Port of Manchester" and "Voices Under the Sea." Caxton Hall, Caxton-street, Westminster, S.W.1. 6 p.m.

FRIDAY, DECEMBER 7

ILLUMINATING ENGINEERING SOCIETY (BIRMINGHAM CENTRE).—"The Architect's Approach to Artificial Lighting," by Mr. R. G. Cox. Imperial Hotel, Temple-street, Birmingham. 6 p.m.

NO MORE STATE PUBS?

SPECULATION over the new Government's policy on the ownership of public houses in the New Towns has been aroused by the cancellation, last week, of meetings of the licensing advisory committees for certain of the New Towns. The Home Office has refused to comment on the implications of this move, but many have read the same meaning into it as Mr. L. R. N. Percey, general secretary of the Licensed Victuallers' Defence League, who said it appeared unlikely that the State would now take over any existing licensed houses or itself erect new ones.

There is a widespread desire, which is not confined to architects and planners, for the New Towns to be a success, but surely this is more likely to be achieved if the State avoids such petty interference with established tradition as the running of pubs. As a correspondent recently pointed out in our columns, we are not all yet ready to make the milk bar the centre of our social activities.

RESPONSIBILITIES & REMEDIES

A DISCUSSION on the general theme "Speed the job—who's to blame for the muddle? Who can put it right?" will be held at Denison House, Vauxhall Bridge-road, S.W.1, on December 12. Speakers will include Mr. Whitfield Lewis, A.R.I.B.A.; a representative of the contractors, Mr. D. E. Woodbine Parish; a sub-contractor, Mr. D. H. Green; Clerk of Works, Mr. G. R. Millhouse; and an operative, Mr. J. Ryan. The Chairman will be Mr. R. J. Soper, President of the Association of Building Technicians. The discussion has been sponsored by the London Branch of the Association of Building Technicians.

DORSET COUNTY ARCHITECT

MR. JAMES HURST, A.R.I.B.A., deputy architect of Somerset County Council, has been appointed architect to the Dorset County Council at a salary of £2,000 per annum.

PROFESSIONAL ANNOUNCEMENT

MR. C. B. MARTINDALE, F.R.I.B.A., has taken into partnership MR. F. GERALD JACKSON, A.R.I.B.A., who has given up his position as chief architect to Barrow-in-Furness Corporation. The practice will continue as heretofore under the title of MESSRS. J. H. MARTINDALE AND SON, at Cathedral Chambers, Castle-street, Carlisle.

FROM "THE BUILDER" OF 1851

Saturday, November 29, 1851

ISTHMUS OF SUEZ RAILWAY AND CANAL—From Alexandria, the line proceeds in a south-eastern direction to Damanhour, passing at short distances from Salamoun, Nadir, Wardan, and Kelioub, to Cairo. The proposed route across the desert from Cairo to Suez, branches off from the Alexandrian line at Bulah, a few miles north of Cairo, and proceeds nearly parallel with the present Great Hadj route, to Suez on the Red Sea. The route of the proposed ship canal commences in the Mediterranean, at the mouth of the Tineh, the entrance to the ancient Pelusiac Canal, and proceeds in a southern direction to Suez, terminating in vestiges of the ancient canal of Sesostris or Necho.

CORRESPONDENCE

A TIME FOR GIVING

SIR,—I am again appealing at this season on behalf of the Architects' Benevolent Society, for funds to help architects and architects' assistants and their families when in need.

To those who responded to my appeal last year I would like to say thank you again, and I hope they will renew their support which we need so much. To those whom my previous appeal did not reach, may I now say that we shall welcome a contribution, large or small according to their means, so that we may bring relief to those who have fallen on hard times. No one can be sure that misfortune will not strike him or his family, through illness, sudden death, failing eyesight, old age or other troubles; indeed, many of those who come to the Society were once thriving and successful. We do not, of course, divulge the names of those who apply to us, but we are always happy if we are able to help them. This help costs money, and if only every architect—there are some 16,000—would send a small sum each year, we should have no difficulty in giving it. As it is, our work is restricted to what can be done with the money given by a small proportion of the profession.

To help the elderly, whose problems are increasing, we have made a good start with our Centenary Appeal Fund for building our own old people's cottages. We are now looking for a site, but we shall need much more money before we can hold a competition for the design of the homes to be built on it. I hope that you will remember the merits of this Fund as well as of the General Fund when you send your donation.

A. GRAHAM HENDERSON.
President, Architects'
Benevolent Society.
66, Portland-place, W.1.

R.I.B.A. RULING ON OFFICE EXPERIENCE

To the Editor of *The Builder*

SIR,—As the two students who wrote to your journal some months ago regarding the application of the R.I.B.A.'s ruling of one year's part-graduate office experience before qualification for The Associateship, we are particularly grateful to learn, from the recent announcement in *The Builder*, that the R.I.B.A. is considering setting up a Tribunal to consider special cases.

We should like to make it clear that it was not the general principle of a year's post-graduate experience to which we, and many other students, objected. We *did* question, however, the principle of imposing this requirement upon those already half-way through their training, and especially upon those who have now satisfied the requirements in force when their training commenced.

The fact that this ruling bears most heavily upon those ex-Service men now in the last year of their architectural training merely aggravates this grievance, and should not confuse the primary issue of indiscriminate enforcement of the ruling upon *all* students, irrespective of the difference between those who had commenced training before the ruling was introduced, and those who now commence their training with a clear understanding of the revised conditions of qualification. We felt that, since exceptions had already been made, there were few administrative difficulties involved in adjusting this unfortunate state of affairs.

We would like to express our very great appreciation that the R.I.B.A. are reconsidering the whole question and will set up a Tribunal before the next Finals examination in March. This has also been confirmed by our President, Mr. Anthony Chitty. The evident concern on the part of our professional body for their responsibilities towards their junior members is particularly gratifying in view of the fact that we have no voice whatever within the Institute.

PETER MANNING.
GAVIN SCULLY.
Architectural Association,
Bedford-square, W.C.1.

TRADITIONAL OR PREFABRICATED?

To the Editor of *The Builder*

SIR,—In almost every issue of *The Builder*, we of the building trade are reminded by our detractors that we are collectively a lot of half-witted, archaic morons, and whilst few of us would claim that all was, in fact, well, some of us can remember the results of the search since 1919 for new materials and methods.

True, there have been some outstanding successes, but there have been enough dismal failures to remove any smugness from these "gentlemen of the reformation" if they care to reflect on, say, the steel and concrete monstrosities called houses erected after the 1914-18 war, or the prefabs erected since the second world war. Can either of these claim to be cheap, durable or healthy structures, or things of beauty? Is the market in this field now saturated? On the contrary, there is still a crying need which has still to be met somehow or other, either by new methods or old. It is my opinion that it will ultimately be met by the use of old and well-tried methods and materials, and that anyone who wishes to further the interests of both the country as a whole and the trade, will best achieve it by encouraging our craftsmen to recapture their antiquated skill using mainly similarly ancient materials.

G. PASK.

96, Davidson-road,
Addiscombe, Surrey.

TENDERING AND A CENTRAL ESTIMATING OFFICE

To the Editor of *The Builder*

SIR,—The letter in your last issue from Mr. Kell suggesting a new method of tendering is very interesting, and I am looking forward to reading the reactions of contractors and estimators.

My only comments are, that if some such method is adopted it would seem that the most suitable person to price the bills of quantities is the quantity surveyor responsible for them, as they could then be duplicated complete with all prices included therein. If the R.I.C.S. and the N.F.B.T.E. would agree or compile a schedule of labour and material constants to be used as a basis for building up individual prices, we should thus have a "standard method of pricing," and then by making up a sum representing the estimated nett cost of a contract, each tenderer, if given a full list of basic rates with the priced bill, would know exactly how each item had been calculated, and could make the necessary adjustments for overheads, profit, etc., to arrive at his tender. It might also be preferable for the "preliminaries" and "works on site" bills to be left unpriced, for the tenderers to insert their own prices in these trades.

Such a system would, as Mr. Kell states, save contractors much time and expense, but would, of course, extend the time required by quantity surveyors in preparing the bills.

E. DENIS KNIGHT [A.R.I.C.S.]
12, Queen-square,
Brighton, 1.

To the Editor of *The Builder*

SIR,—Mr. Kell's suggestion is a very good one, but how can a fair price be obtained when we have already given each individual builder a list of measured prices? We must bear in mind that the art of estimating is in not knowing what any one else is charging; that in itself is a good enough reason for built-up "pricing."

I always feel very pleased with my fellow estimator when, after weeks of very hard work, he has landed a contract; we should have more inexperienced estimators in our midst than in any other part of the industry if Mr. Kell's idea was in force.

Would your correspondent be in agreement with a suggestion that we should have a Central Board of Architects so that standard plans could be sent out to all Councils?

HAROLD STEPHENSON.
46, Ashfield-avenue,
Middlesbrough.

To the Editor of *The Builder*

SIR,—I have read with interest Mr. T. Kell's letter, and while it is a new idea to reduce estimating costs, I feel that there are too many disadvantages for it to become really effective in reducing these costs.

Together with a small staff, I have been preparing estimates for a fairly large number of builders for a number of years, and find that in order to produce a satisfactory estimate for my clients I have to keep files of data for each client showing the various price build-ups which have applied to their system of working. Therefore if the Central Office idea came into being I would have to allow for a variation of price account almost throughout the bills in order to ascertain how I ought to recommend my client to tender. One has not to study the results of tenders for very long to realise that the variation of opinion among estimators is very great.

However, I think that the cost of estimating could be reduced if the

employing authority, having already decided to use certain materials in their construction, would obtain and quote the prices of these materials in all cases.

The building owners know that they have eventually to bear the cost of preparing estimates, therefore I would put forward a suggestion that a sum be set aside for this purpose; applications for tenders could then be invited stating the sum which would be allowed to each contractor for the purpose, or alternatively certain contractors could be invited to tender. In any case the building owner would select his tenderers. The contractor would then be called upon to prove that he had in fact prepared an estimate by submitting with his tender all his documents showing how he had detailed his price, and only by this submission would he be able to claim the costs allowed for preparing the estimate. Alternatively he could, of course, return these documents and forgo his claim, which is where he stands to-day.

While I realise that this system is open to abuse, I do think that when the whole scheme is fully examined safeguards could be made, and the estimating costs to the contractor be reduced.

VICTOR H. FERN.

15-16, Queen-square,
Wolverhampton.

AN ESTIMATORS' ASSOCIATION

To the Editor of *The Builder*

SIR,—The correspondence on the formation of another professional body—this time for estimators—proves the existence of much discontent on the contracting side of the building industry. It appears that existing organisations have failed to meet the requirements of an important group of technicians. For example, the R.I.C.S. failure to recognise quantity surveyors employed by contractors, even when they have previously qualified in a professional office, has been the subject of comment in two official reports. The Institute of Quantity Surveyors also has had a great opportunity to step in here.

Yet it is doubtful whether another body would help matters. The formation of such a body of a standard which would be recognised throughout the building industry is no easy task. Many problems will arise; examinations, exemptions, and so on, will be difficult matters on which an early agreement will have to be reached. A new body could easily fail through lack of finance or the recruitment of suitable staff.

The problem could be overcome in either of the following ways: (1) The R.I.C.S. to act in a similar manner to the Institution of Civil Engineers and allow members to retain their qualification when employed as estimators or surveyors by contractors.

(2) The R.I.C.S. to form a separate section to deal with the question. (After all, there is more in common between contractors' surveyors and professional surveyors than many of the existing groups embodied in the R.I.C.S.)

(3) The Institute of Quantity Surveyors to call an emergency meeting to discuss the questions raised by your correspondents.

The task of the building industry is so great that a more realistic approach to the whole problem must be made by all concerned. S. Q.

To the Editor of *The Builder*

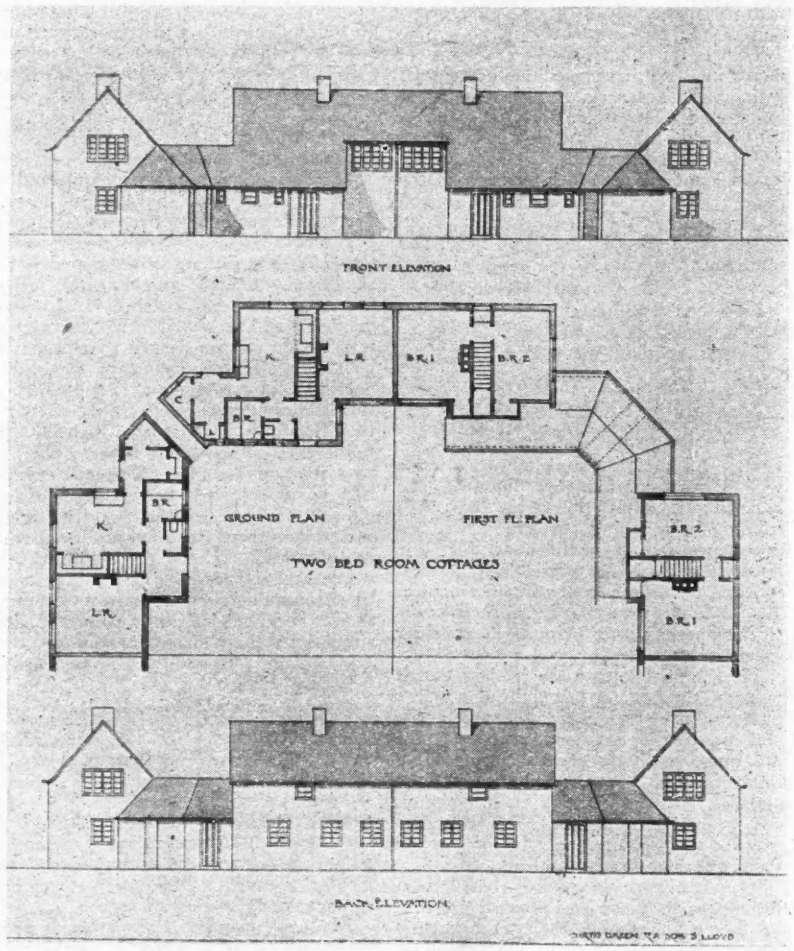
SIR,—I take the opportunity of thanking you for the good response I have received from persons who replied to my offer of forming an Institute. I have personally replied to a lot of these correspondents, and it is arranged that an informal general meeting is to take place in December. Some of the persons with whom I am corresponding suggest that the meeting should be held in London, but one has to bear in mind that this Institute will be of interest to the whole country. The people who have offered their support to me range from the North, Midlands and South, and it is my intention to be fair in trying to get all these interested persons to the first meeting, and to do this, it is my suggestion that I send the name of three towns, including London, from which each correspondent may decide their choice, and the one receiving most support should be considered the appointed.

Since the initial response to my call for support, I have already embarked on legal procedure for the formation of this proposed Institute by approaching a legal adviser, so that it will commence in a correct professional manner on Charter lines. This information will be put forward at the forthcoming meeting.

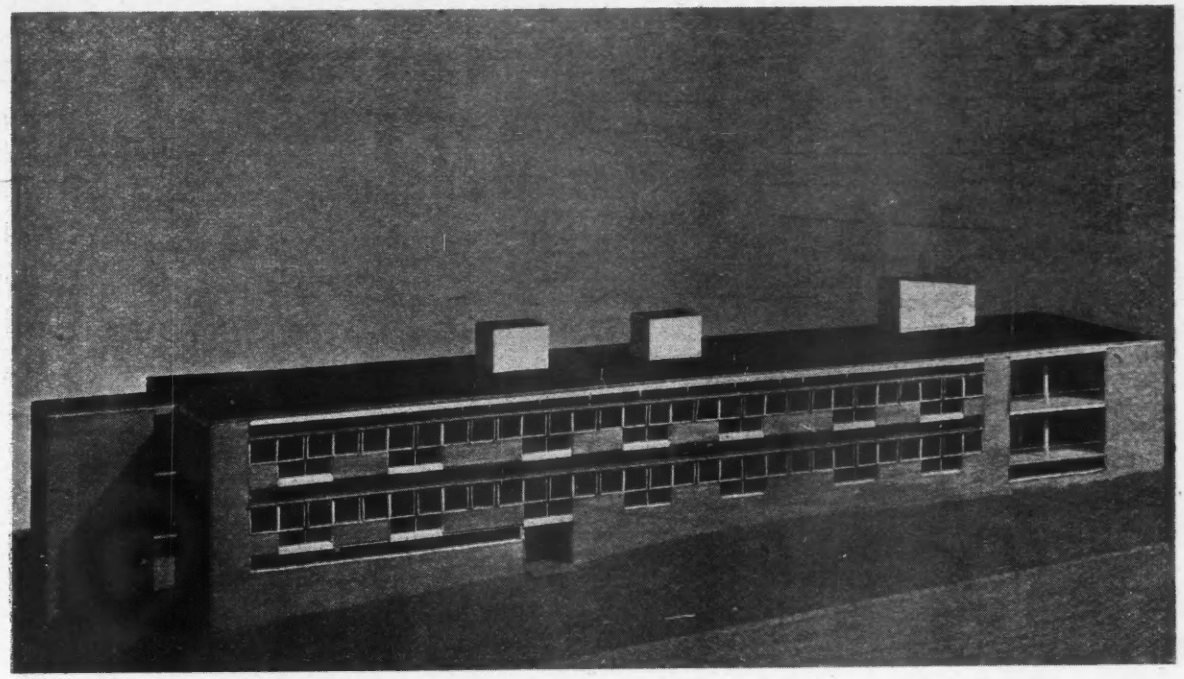
To get the national support this proposed Institute deserves, it means that the correspondence incidental to the first meeting should pass through one channel. My letter in *The Builder* for November 16 was for this purpose. I will inform all correspondents in good time of the place finally decided for the meeting. The main business of the first general meeting will be to appoint a governing body, and also make arrangements for the setting up of local branches linked with the appointed governing body. To do this, one must realise that representation on that body should be given from all parts of the country at this initial stage.

T. L. FARRELL.

"Ianholme," Parkside Avenue,
Cockermouth, Cumberland.



A SET OF TWO-BEDROOM COTTAGES intended for a farm. Designed and drawn by W. Curtis Green, R.A., F.R.I.B.A. (Curtis Green, Son and Lloyd), and shown at this year's Royal Academy Exhibition.



HOSPITAL WARD BLOCK AT GREENOCK

Designed for the Investigation into the Functions and Design of Hospitals

RICHARD LLEWELYN DAVIES, MA, ARIBA,
Architect and Director of the Investigation

THE Investigation into the Functions and Design of Hospitals was set up early in 1949 by the Nuffield Provincial Hospitals Trust at the suggestion of its secretary, Mr. Farrer-Brown. It is sponsored jointly by the Trust and Bristol University. The investigation team includes, besides the director and architect, a doctor, a nurse, an historian, a field work organiser and an accountant, assisted by a staff of architects, time study engineers and research workers. A panel of expert advisers composed of men and women eminent in medicine, nursing, architecture and the social sciences is available to advise the team. The investigation also co-operates with other bodies in certain fields. For example, the problems of heating, lighting, ventilation and fire protection are being studied at the Building Research Station, to which a senior member of the investigation staff has been seconded for this purpose. Similarly, certain social and medical aspects of the hospital are the subject of work done jointly with the Department of Human Ecology in the University of Cambridge.

The object of the investigation is to produce a report designed to help those

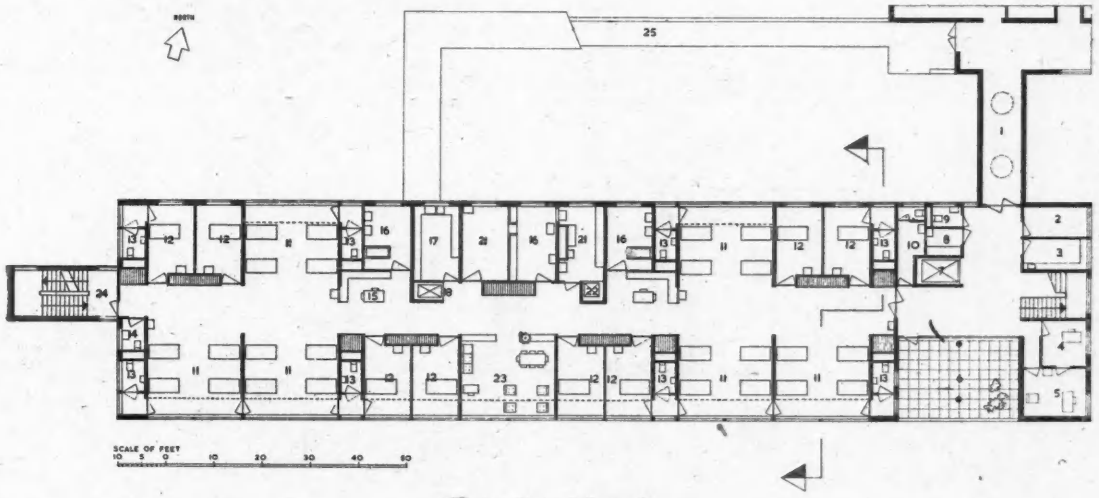
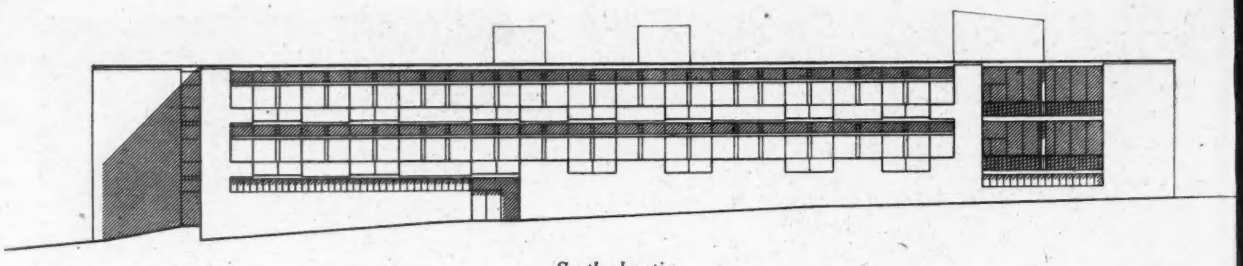
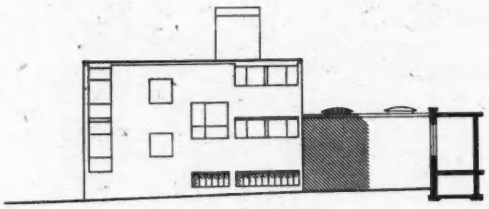


Fig. 1.—Ground-floor plan.

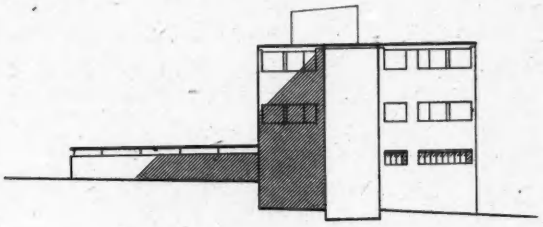
1 CORRIDOR LINK WITH MAIN HOSPITAL.
2 STORE ROOM (DOCTORS' ROOM ON FIRST FLOOR).
3 LABORATORY.
4 INTERVIEW ROOM.
5 SISTER'S ROOM.
6 LOGGIA.
7 BED LIFT.
8 CLEANER.
9 VISITORS' AND DOCTORS' TOILET ROOM.
10 NURSES' TOILET AND LOCKER ROOM.
11 FOUR-BED WARD.
12 SINGLE-BED WARD.
13 PATIENTS' TOILET ROOM.
14 NURSES' TOILET ROOM.
15 NURSES' STATION.
16 BATH AND WASH ROOM.
17 KITCHEN.
18 SUPPLY LIFT.
19 TREATMENT ROOM.
20 CLEAN UTILITY ROOM.
21 DIRTY UTILITY ROOM.
22 DISPOSAL LIFT.
23 DAY SPACE.
24 ESCAPE STAIR.
25 SERVICE RAMP TO LIFT ROOMS IN BASEMENT.



South elevation.



East elevation.



West elevation.

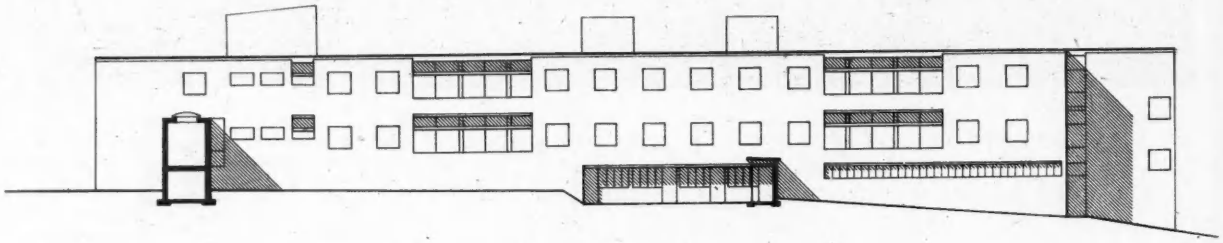


Fig. 2.—North elevation.

authorities and architects concerned with the provision of hospital services. This report will be issued about the end of 1952.

The first problem to be studied was the hospital ward. About a year ago it became apparent that the investigation would greatly gain were it possible to build some actual wards incorporating the ideas being thrown up by research. In particular, such experimental building was important in order to see whether certain anticipated economies in building and running cost could be achieved in practice. Accordingly, the progress being made by the investigation was made known to the principal hospital authorities in the British Isles, and immediately the Department of Health for Scotland and the Northern Ireland Hospitals Authority offered to arrange for the building of wards to the experimental designs worked out by the team. As a result, there will be shortly two experimental buildings in operation. These buildings will be in fact working laboratories for the study of ward design and operation, where experiments can be staged and the results recorded over a period of time. These experiments will cover nursing method and organisation as well as heating, lighting and ventilation—the latter tests being conducted jointly with the Building Research Station. The running costs will be recorded in detail by the departmental costing methods, which the Nuffield Trust are developing at the request of the Ministry of Health.

Tenders for the block at Greenock have been received, and an analysis of its cost will be made and published in due course. It appears that the price per ft. cube will be about 5s. 3d. This figure covers various arrangements and items of equipment required for experimental use which would not form part of a normal ward block. Taking into account the high standard of

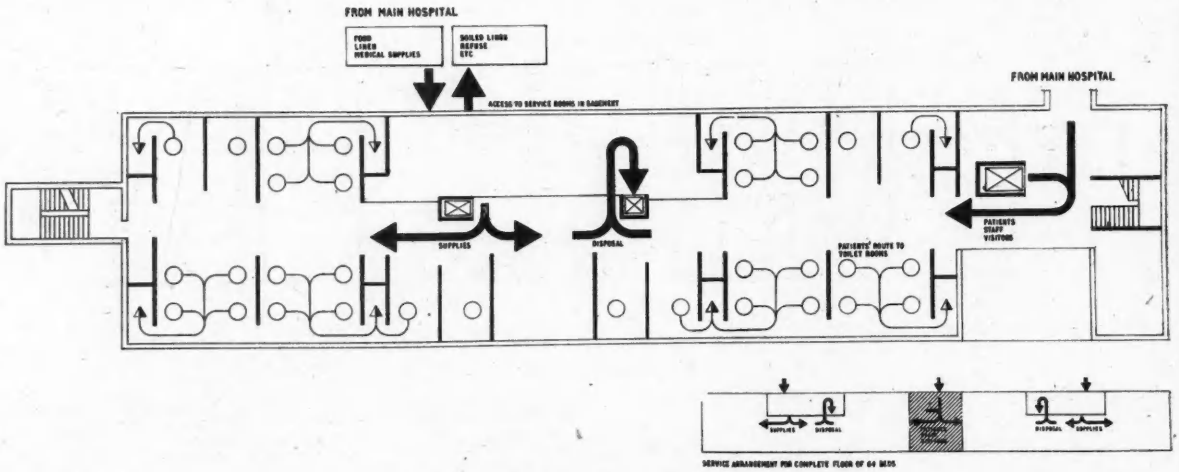


Fig. 3.—Routes of traffic and supply.

6'10"
8"
7'6"
2'10"
8"
7'6"
2'10"
8"
16'6"
6'8"
20'0"

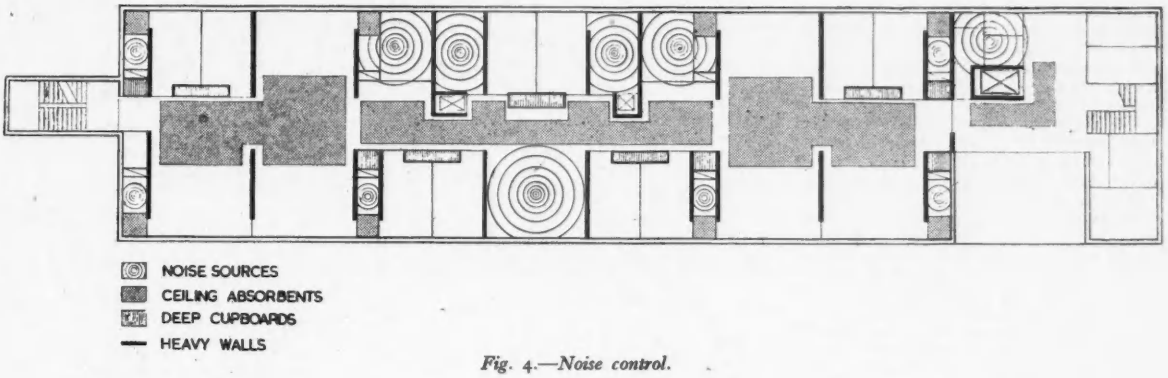


Fig. 4.—Noise control.

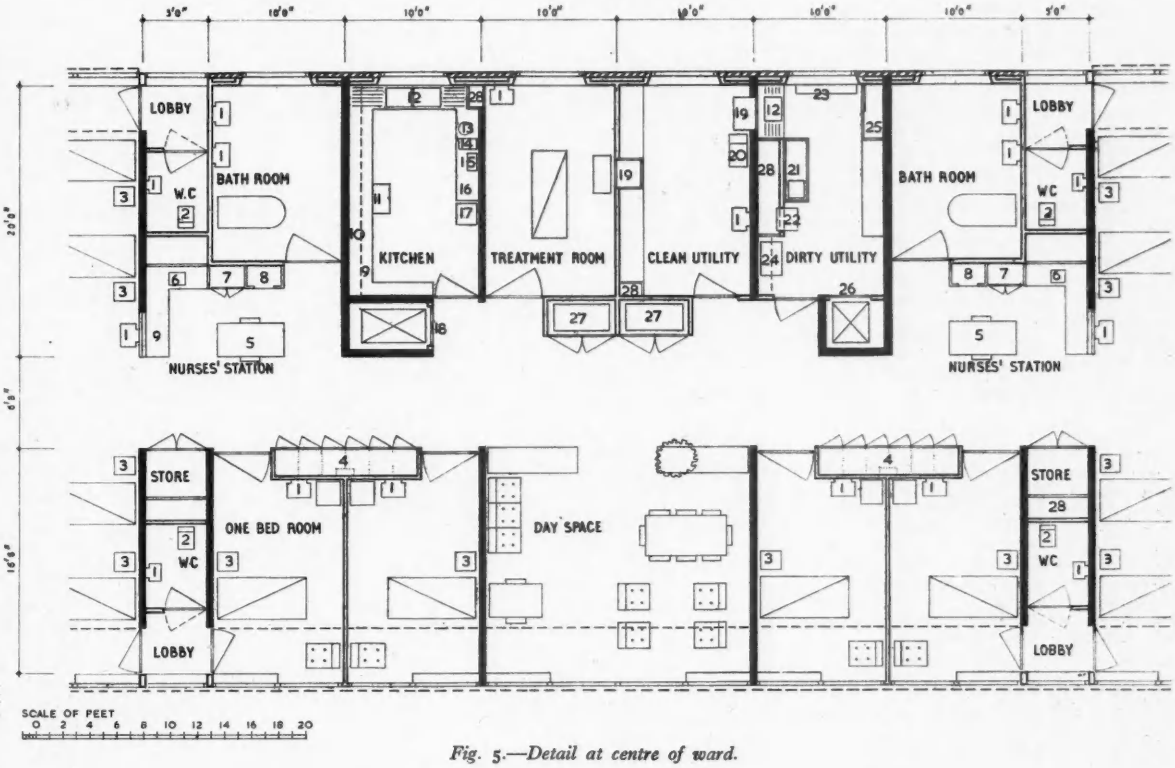


Fig. 5.—Detail at centre of ward.

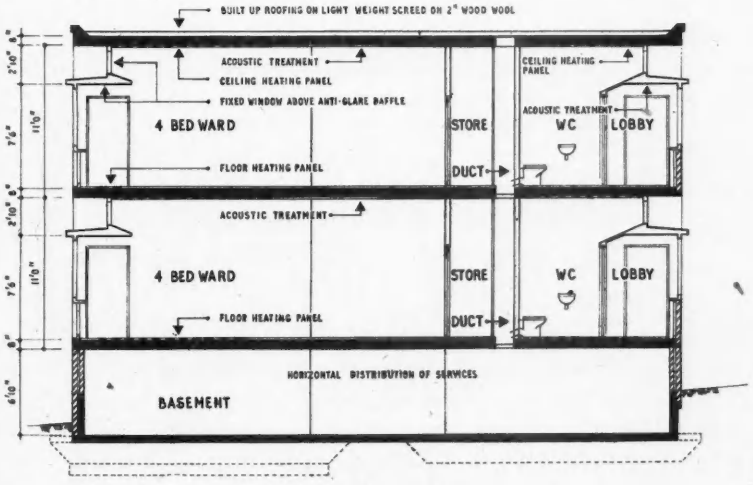


Fig. 6.—Cross-section.

KEY TO FIG. 5

1 Washbasin.
2 W.C.
3 Bedside Locker.
4 Patients' clothes locker.
5 Nurses' desk.
6 Medicine sink.
7 Medicine cupboard.
8 Telephone booth.
9 Counter with cupboard under.
10 Cupboard.
11 Pull-out work table.
12 Sink.
13 Hot-water boiler.
14 Hot plate.
15 Toaster.
16 Plate-warming cupboard.
17 Refrigerator.
18 Supply lift.
19 Hatch.
20 Bowl and instrument steriliser.
21 Slop sink and slab.
22 Bed-pan washer.
23 Mackintosh-sheet rack.
24 Bed-pan steriliser with rack over.
25 Specimen cupboard.
26 Disposal lift.
27 Linen store.
28 Vertical pipe duct.

equipment and finish used at Greenock, the figure represents very economical building. The economy has been reached mainly by very compact planning, simple and straightforward shape, and by the use of load-bearing walls as a structural form. The design and working drawings for the project were prepared in the London office of the Investigation into the Functions and Design of Hospitals. Mr. John Weeks, A.R.I.B.A., Chief Assistant Architect to the investigation, and Mr. D. J. Petty, A.R.I.B.A., Research Architect (attached to the Building Research Station), were associated with the design.

The following specialists collaborated with the team: structural engineering: Messrs. Ove Arup and Partners; heating, electrical and mechanical services: Messrs. J. Roger Preston and Partners. The execution of the work for the Western Regional Hospital Board is being carried out by Mr. Forbes Murison, A.R.I.B.A., Chief Architect to the Board. The quantities have been prepared by Mr. William Ward, F.R.I.C.S., of Glasgow.

THE SCHEME IN DETAIL

This is a two-storey block containing two 32-bed wards, built as an addition to the Greenock Royal Infirmary for the Western Regional Hospital Board. The plan (Fig. 1) embodies the results of a number of research studies covering medical and nursing requirements. For example, the rather large proportion of beds in single rooms, 25 per cent. of the total, derives from research by Dr. J. W. D. Goodall, a former member of the team.[1] This proportion of single rooms was shown to be necessary if the seriously ill or distressing cases were to be isolated, as it is generally accepted they should be.

From another piece of work by Dr. Goodall,[2] it appears likely, owing to the increasing tendency to get patients out of bed earlier, that nearly three-quarters of the patients may be able to use lavatories and washing facilities. Medically, it is desirable that they should be encouraged to move around a little as soon as possible and, of course, the more they can do for themselves, the less is the work for the nurse. Hence the very generous provision of lavatories and wash-basins, which, instead of being concentrated at one end of the unit, are distributed so as to reduce the distance the patient has to go. No patient is more than about 23 ft. from a lavatory or wash-basin.

Economy in the nursing time is, of course, a primary aim in ward planning. Here the investigation has been able to make use of the extensive material being collected by the Nuffield Hospital Job Analysis, an independent research project with which a close link has been maintained. The investigation has itself recorded and analysed the journeys made by the nursing staff in six different wards[3] and found that a typical nurse's day includes 300 to 400 journeys, totalling 2 to 2½ miles.

The compact plan shape was designed to reduce walking distances, and with the same object the principal ancillary rooms are placed in the centre of the beds they serve. The accommodation for the medical staff,[4] together with the main lifts and stairs,

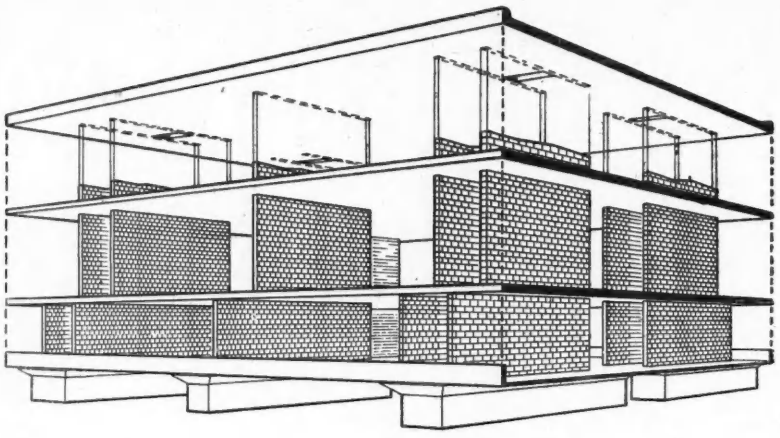


Fig. 7.—The bearing-wall and flat-slab structure.

Fig. 8.—Perspective view of the day space.

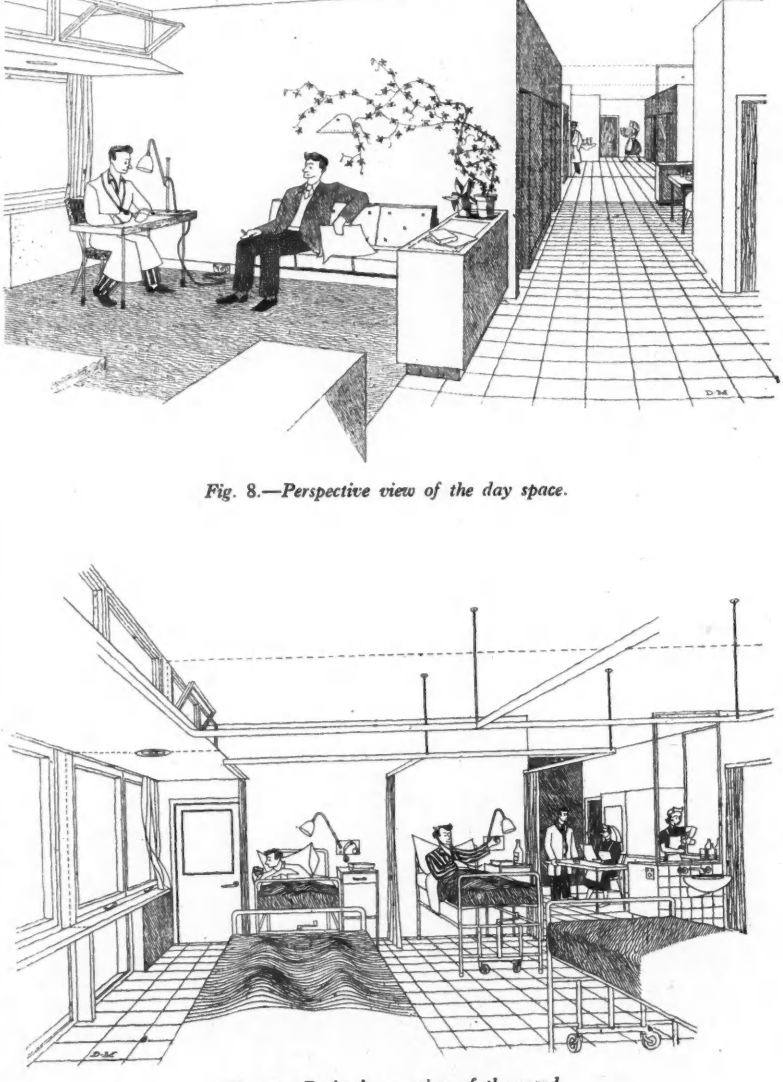


Fig. 9.—Patient's-eye view of the ward.

1 Single Rooms in Hospital: Estimate of the Medical Need. J. W. D. Goodall, M.D.Edin., F.R.C.P.E. Lancet, 1951 (i) 1063.
2 Early Ambulation: A Survey of Hospital Practice. J. W. D. Goodall, M.D.Edin., F.R.C.P.E. Lancet, 1951 (i) 43.
3 Nuffield Investigation into the Functions and Design of Hospitals: R. Llewelyn Davies, M.A., A.R.I.B.A., Building Research Congress, 1951. Paper presented to Division 3.
4 Accommodation for Medical Staff in Hospitals: J. W. D. Goodall, M.D.Edin., F.R.C.P.E. Lancet, 1951 (i) 847.

would normally serve two units on any one floor, although in the Greenock experiment only one wing is being built. Thus in the full development there would be 64 beds per floor, 32 on either side of the main stair and lifts.

Elevations are shown in Fig. 2.

One of the objects of the experiments is to find the effect on nursing of improved arrangements for the delivery of food and medical supplies to the ward and for the removal of refuse. The circulation diagram (Fig. 3) shows that the main lift is reserved for the use of patients, staff and visitors and the lift or lifts in this position would, of course, normally serve two wards. Goods supply is by comparatively small lifts or hoists placed so as to deliver the goods where they are needed in the ward—that is close to the ward kitchen and the utility room. Porters thus never go into the wards at all, but despatch goods from the basement. The disposal lift, which opens directly into the sluice room, enables dirty and infected material to be sent away from the ward immediately.

It will be seen that the route taken by patients going to lavatories or wash room also helps to keep the centre of the ward free from traffic.

NOISE CONTROL

Hospital wards are notoriously noisy—noise is one of the principal causes of discomfort to the patients. The diagram (Fig. 4) shows the sources of noise and the positions of noise-resisting walls and ceiling absorbents. Generally, heavy bearing walls, which form part of the structure, form useful barriers to air-borne sound. In order to make a further improvement in conditions, however, it has been thought necessary to make use of sound absorbent areas in the ceilings at certain points. Ceiling absorbents are commonly used in American and Continental hospitals but have been little used in this country. Medical opinion has been that there is a possibility of dangerous concentrations of dust and bacteria in any perforated material. Some absorbent materials are also undoubtedly dangerous from the point of view of fire. After study at the Building Research Station a form of absorbent ceiling has been devised which is believed will prove satisfactory for hospital use.

The nature of the structure is advantageous in checking structure-borne sound by comparison with the usual form of steel or concrete frame. In addition, the floor surface is isolated from the structural slab by a layer of glass silk quilting. The floor finish, cork tiles, was itself selected with a view to minimising impact sounds.

The ward ancillary rooms incorporate the results of time and motion study; in particular the clean utility and dirty utility rooms are arranged in such a way as to provide a proper sequence of work (see Fig. 5). Immediately inside the door of the dirty utility room are arrangements for the disposal of soiled materials and refuse. Further into the room are the provisions for the washing of dirty bowls and instruments. After washing, these are passed through a hatch into the steriliser in the clean utility room. The clean utility room is itself connected by a hatch to the treatment room.

The value of treatment rooms is now generally accepted and they are included in most projects. If, however, they are not to add to the work of the nurses, they must be near the centre of the beds they serve, and have direct access from the utility room for instruments, dressings, and so on.

The day space is placed within easy reach of the kitchen to enable meals to be served in it to those of the patients able to sit up. These may amount to 30–40 per cent. of the cases under modern conditions and of course meals served in the day space involve very much less work than meals in bed.

The section (Fig. 6) shows the flush ceiling, entirely free from beams, made possible by the flat-slab construction. It also shows the positions of the embedded heating panels and the areas of acoustic treatment.

One of the problems associated with deep building is that of providing good lighting without glare over the whole area. In the case of hospital wards this problem becomes critical due to the immobility of the patients and their special sensitiveness to light. While a fully glazed external wall will provide good lighting at the centre of the building, it makes conditions for the patient nearest it very trying, as he is subject to the full glare of the high sky. Studies made in a 1 in. to 1 ft. scale model at the Building Research Station[5] showed that while it was not necessary to glaze the whole of the external wall, a portion of the window should preferably have a very low sill to enable the floor to reflect light into the centre of the building. In order to control the glare from the high sky for the patient nearest the external wall, a horizontal baffle 7 ft. above the floor and 4 ft. deep is provided in the window along the whole of the south elevation and in the wards only on the north elevation. This baffle has the effect of lowering the intensity of light near the window, while still giving good light at the centre of the ward.

The exposure conditions are exceptionally severe, the site being on a hill-top, where gusts of up to 100 m.p.h. are experienced. For this reason mahogany windows of the Swedish Gurda design have been used throughout.

The structural form arises out of the plan and was developed simultaneously with the planning from the earliest design stage. Thus the cross divisions at 20 ft. centres naturally became bearing walls (Fig. 7). It was found that these walls did not require reinforcement in such a comparatively low building. The structure therefore consists of 6-in. concrete block cross walls at 20 ft. centres supporting flat reinforced concrete slabs forming floors and roof. At intervals the cross walls are paired, 5 ft. apart, forming plumbing units and ducts. The non-structural external walls are supported on the cantilevered floor slabs, and are normal cavity walling with foamed slag blocks for the inner skin. As the cross walls are of block construction the only shuttering and reinforcement needed is for the floor and roof slabs. The shuttering is extremely simple as there are no beams. Panel heating is incorporated without varying the thickness of the slabs and acoustic treatment is recessed 1-in. into the underside.

The ward block at Greenock is only one of many ways in which the fundamental requirements of ward planning, as they are coming out in the work of the investigation, can be satisfied. The drawing (Fig. 10) shows another plan based on the same fundamental principles. In this case the design is suitable for an east-west orientation, the plan being one of several alternatives worked out for the experimental buildings in Northern Ireland.

FUNDAMENTAL PRINCIPLES

The fundamental principles embodied both in this plan and in the Larkfield wards are:

1. Short compact planning. Ward blocks should contain at least two beds for every 10 ft. run;
2. Ancillary rooms should be in the centre to reduce walking distances;
3. Lavatories and washing facilities on a scale of not much less than one to four beds and decentralised so that patients can use them as soon as possible;
4. Adequate day space adjacent to kitchen;
5. One out of every four to five beds to be in a single room;
6. The remaining beds to be in a fairly open layout for ease of nursing, and to maintain some of the undoubted advantages of the traditional British open ward.

Where it is desired to use four-bed wards, partition walls can be placed as shown by the dotted lines. The value of such wards is however questionable once sufficient single rooms have been provided to take all seriously ill or distressing cases.

5. Nuffield Investigation into the Functions and Design of Hospitals: R. Llewelyn Davies, M.A., A.R.I.B.A., Building Research Congress, 1951. Paper presented to Division 3.

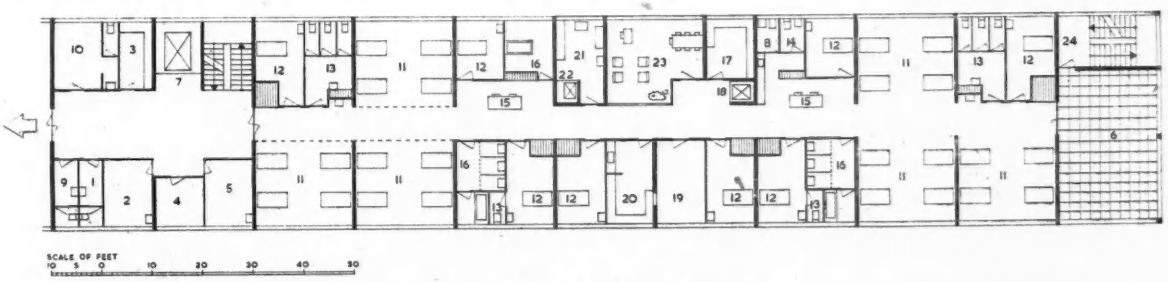


Fig. 10.—An alternative ward layout.

1 Doctors' toilet room.
2 Doctors' room.
3 Laboratory.
4 Interview room.
5 Sister's room.
6 Loggia.
7 Bed lift.
8 Cleaner.
9 Visitors' and doctors' toilet room.
10 Nurses' toilet and locker room.
11 Four-bed ward.
12 Single-bed ward.
13 Patients' toilet room.
14 Nurses' toilet room.
15 Nurses' station.
16 Bath and wash room.
17 Kitchen.
18 Supply lift.
19 Treatment room.
20 Clean utility room.
21 Dirty utility room.
22 Disposal lift.
23 Day space.
24 Escape stair.

General view of bungalows, looking north.

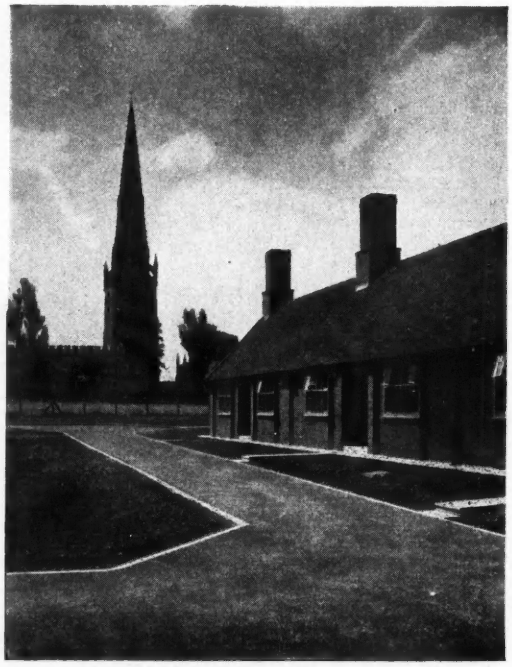
OLD PEOPLE'S BUNGALOWS, HIGHAM FERRERS, NORTHANTS

RICHARDSON & HOUFE, RA, FRIBA, ARCHITECTS

THIS group of houses for elderly persons, which has been given to the Borough of Higham Ferrers by Mr. John White, of Rushden, is one of the most important local benefactions of recent times. It provides for nine separate houses with a large open court and small gardens surrounding the buildings. The site is situated north of the parish church on land once owned by John of Gaunt. This estate eventually passed into the possession of All Souls College, Oxford, through Archbishop Chichely. The adjoining site, known as Castle Close, has recently been given to the borough by the college.

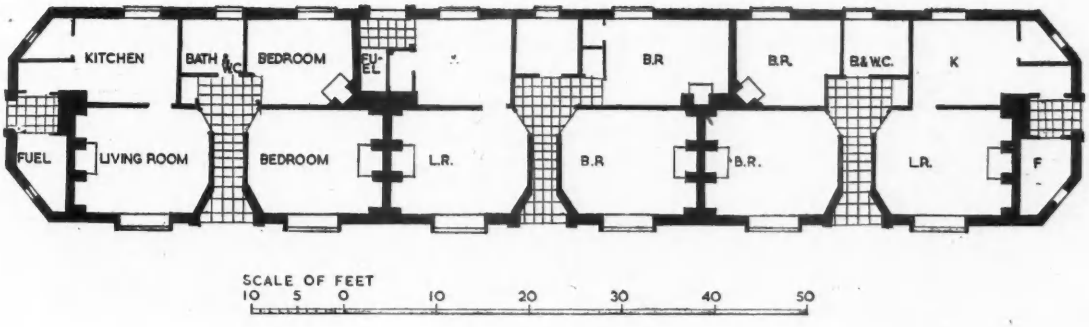
Each separate house contains a living-room, kitchen, two bedrooms, hall, bathroom, and conveniences, the chief feature of the plan being that everything is contained under one roof. At either end of the central block drying spaces are enclosed by trellis screens. The planning of the three terrace blocks allows of the maximum of sunlight to all the rooms. The materials include local hand-made bricks, Stamford tiles for roofs, Finedon tiles for floors, oak doors, and leaded casements. There is a foundation stone, carved by Mr. P. G. Bentham, and roundels carved by Mr. David Evans. The general contractors were Messrs. Arthur Sanders, Ltd., of Rushden.

Sub-contractors and suppliers were: Special fireplaces, Bratt Colbran, Ltd.; casement lights, Henry Hope and Sons, Ltd.; joinery, H. Newsum, Sons and Co., Ltd.; special ironmongery, K. S. Neale; carving, John P. White and Sons, Ltd.; tiling contractor, Broadbent and Stephens; wood block flooring, Horsley Smith and Co. (Hayes), Ltd.; copper gutters, Henry Mainwaring (Coppersmiths), Ltd.; electrical installation, Central Electric Co.; roadwork, R. E. Crawley, Ltd.; gas fittings, Eastern Gas Board; and facing bricks, Raunds Manor Brickworks.



View of west side of group.

Detail view of two groups.



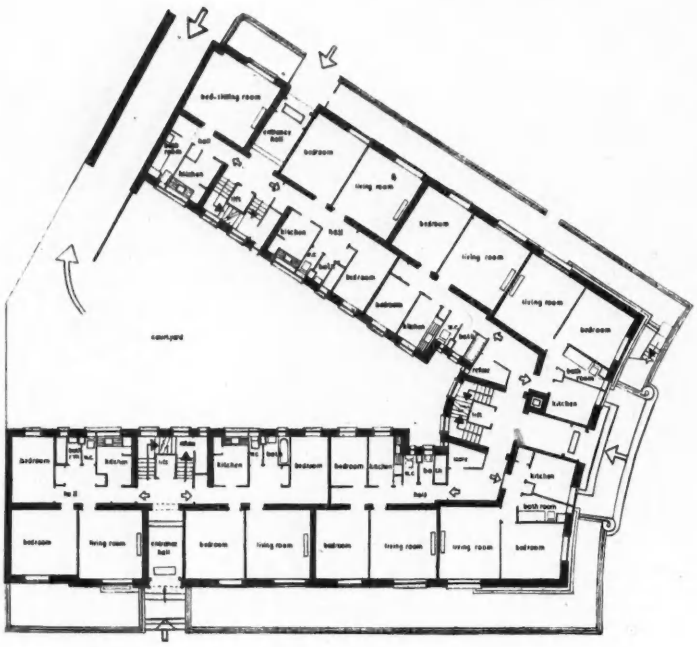
Above : Detail of one dwelling. *Below : Detail of group of three.*

OLD PEOPLE'S BUNGALOWS, HIGHAM FERRERS, NORTHAMPTONSHIRE

Entrance front, from Gloucester-place.

"RADLEY HOUSE," GLOUCESTER PLACE, W.1

GOLLINS, MELVIN AND PARTNERS, ARCHITECTS



GROUND FLOOR PLAN

BASEMENT PLAN

THE architects were required to design on a difficult wedge - shaped site at the corner of Gloucester-place and Park-road, London, W.1, a block of modern flats which, as it was to be financed by private enterprise, could be built under the ceiling figure allowed by the Ministry of Health and would, at the same time, show a return to the clients, Radley House, Ltd., at the controlled rents imposed by the Licensing Authorities.

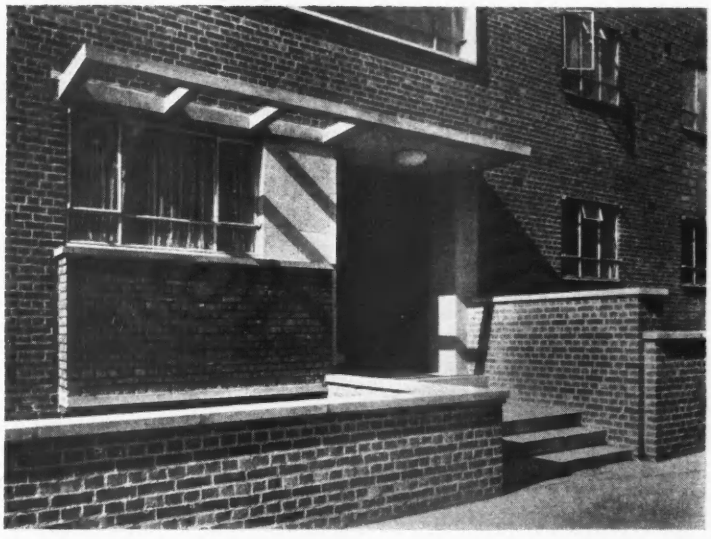
The area of the site which could be built on and the permitted density were laid down under the Town and Country Planning Acts; it was, however, possible to vary the ratio between the number and the size of the flats.

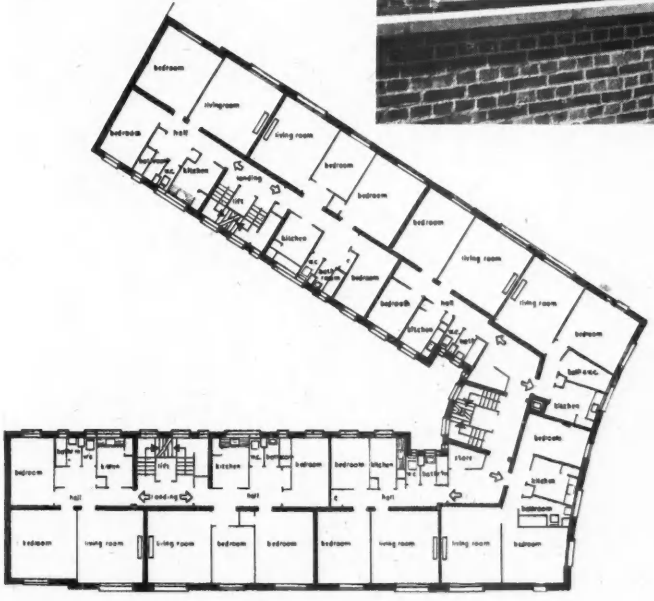
After consideration of various alternative arrangements it was found that ten four - room flats, 30 three-room flats, eight two-room flats and one one-room flat were most satisfactory on this site. This also permitted the provision of a service yard with garages at the rear and an open forecourt in front, which greatly increased the amenity of the road junction Gloucester-place/Park-road. The rentals vary from £205 to £360 per annum, excluding rates.

Detailed Design : There are six floors with eight flats each. On each floor four flats are reached from the central staircase, to which access is gained from the garden forecourt, and two flats from each of the subsidiary staircases approached from Park-road and Gloucester-place respectively. There are slight amendments on the ground floor so as to provide entrance halls and an approach to the central service yard at lower ground floor level. The basement, in which there is a caretaker's flat, comprises ten lock-up garages, boiler house and seven rooms which can be hired by the tenants for extra accommodation or storage. The necessity of keeping the cost of the work under the permitted ceiling figure required that the fittings and decorations be kept to the simplest possible standard. Each flat, however, has clothes, linen and dry storage cupboards, larder, dresser and sink fittings. The majority of the flats

General view is seen above, from Gloucester-place. On the right is a detail of the entrance from Park-road.

with over two bedrooms have a separate w.c. Refuse chutes are planned next to each staircase and discharge into containers which are removed direct by the local authority.





TYPICAL UPPER FLOOR PLAN

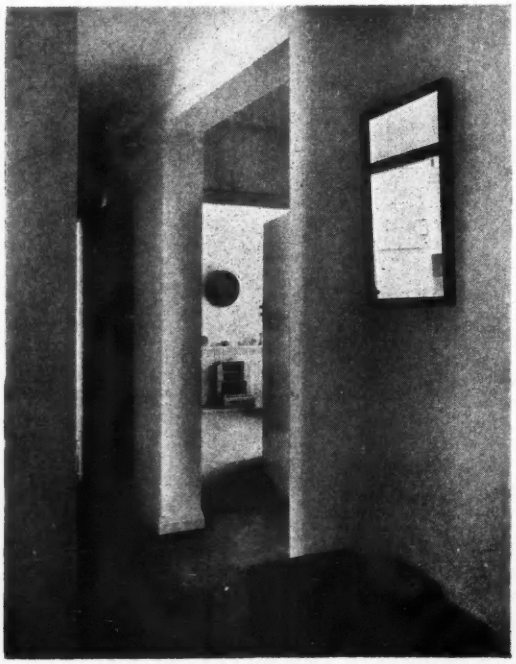
Construction and finishes : At the time this block was designed structural steel was not available, and the walls, therefore, are built of calculated brickwork throughout. Floors are of the suspended type, Smith's patent block. The floor finish in bedrooms and living rooms is cement screed with a flush wood surround, ready to receive fitted carpet, and in the flat lobbies, kitchens, w.cs. and bathrooms cork tiles. The access staircases and landings are cork tile throughout and the entrance halls are carpeted. The facing bricks are hand made sand faced Wareham multi-kiln and are pointed with a flush joint bag finished.

Services : Electric passenger lifts provided at each staircase.

All flats have central heating and a hot water supply from automatically stoked boilers in the basement.

The general contractors were Messrs. Wilson Lovatt and Sons, Ltd., of S.W.1. *Principal sub-contractors and suppliers :* Bricks, A. H. Herbert and Co., Ltd.; flooring (construction), Fawcett Construction Co., Ltd.; electrical, Troughton and Young, Ltd.; heating and hot water, Hope's Heating and Hotwater, Ltd.; ironmongery, Stedall and Co., Ltd.;

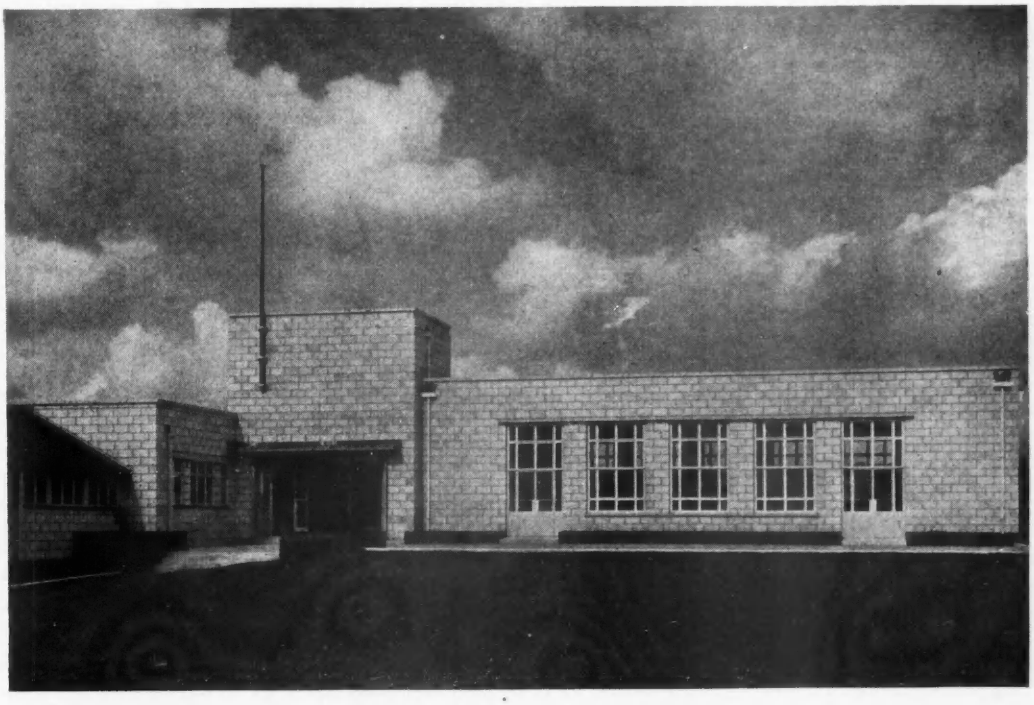
Detail of principal entrance.



Above is a hall in a typical flat.
On the right is a typical kitchen.

railings, Haskins ; lifts, Keighley Lifts, Ltd. ; metal windows, Henry Hope and Sons, Ltd. ; sanitary goods, John Bolding and Sons, Ltd. ; kitchen fitments, E. H. Smith (Croydon), Ltd. ; asphalt, The General Asphalte Co., Ltd. ; artificial stone, Girlingstone and Globe Products ; cork flooring, Elgood, Ltd. ; and flush doors, Veneercraft, Ltd.

"RADLEY HOUSE," GLOUCESTER PLACE



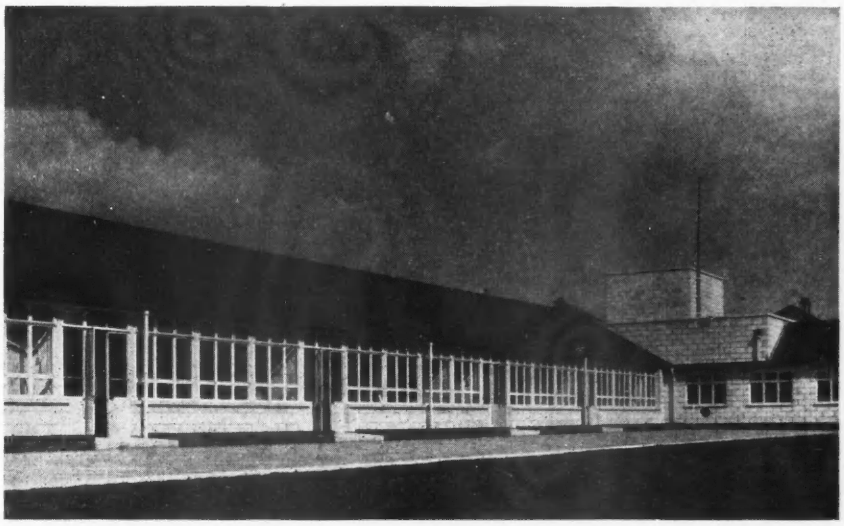
The entrance front.

NEW INFANTS' SCHOOL, FALMOUTH, FOR CORNWALL C. C.

SYDNEY GREGSON, FRIBA, ASSISTED BY N. WHEATLEY, ARIBA (CHIEF ASSISTANT ARCHITECT FOR SCHOOLS), AND J. TAYLOR, ARIBA

THIS school which accommodates 240 infants was opened earlier this year by Mr. G. H. Johnstone, a former chairman of the County Education Committee. The principal approach is from Jubilee-road by means of a short, sweeping drive to the main entrance hall. Flanking the drive on the left-hand side is the administrative wing, and on the right of the entrance hall is the school hall, of 1,800 sq. ft., decorated in pastel shades and having polished hardwood block flooring, with a large chair and games equipment store adjoining.

The main classroom wing is approached on a lower level by a short, wide staircase with children's cloakrooms, drying rooms and lavatories at each end of the classroom corridor. Each of the six classrooms is designed to suit very young children, with built-in furniture scaled down to their size and special north and south window lighting. Each classroom is decorated differently to give a bright, varied and sunny atmosphere ; double doors are provided opening on to a wide, paved terrace for outdoor teaching, while under the windows are planting boxes to encourage the planting of flowers by the children themselves. This classroom terrace faces south, and the ground beyond the terrace has been grassed and gently falls away to two tarphalted regulation size playing courts. The classroom



The classroom wing.

wing joins the dining and kitchen wing at the west end of the building, where a small milk bar with low counter and other ancillary accommodation is situated.

The boiler-house is planned under the kitchen with electric intake and switch room, caretaker's store and large fuel store adjoining at boiler-house level. A caretaker's bungalow is being erected at the western end of the site in Cornish Unit construction, with tiled roof.

The school is built generally with specially faced concrete blocks around light steel framing, with purpose-made metal windows and insulated suspended ceilings. The heating is by means of radiators and pipes, supplied on the low pressure system. Domestic hot water supply is provided by means of a separate boiler. All services are in copper. Water is controlled over children's basins by a series of mixing valves to regulate water temperatures.

Electric lighting is provided throughout with simple enclosed shades to give good lighting distribution. Floors to classrooms and dining-room are of " Granwood " ; the staff rooms and entrance hall of " Semtex " tiles ; and assembly hall of " Onsite " hardwood blocks.

Cloakrooms are heated throughout and are equipped with steel racks with seats and shoe lockers. The kitchen layout is larger than is required for this school, but it is proposed later to erect a junior school on another part of the site and the kitchen and dining facilities will be common to both schools.

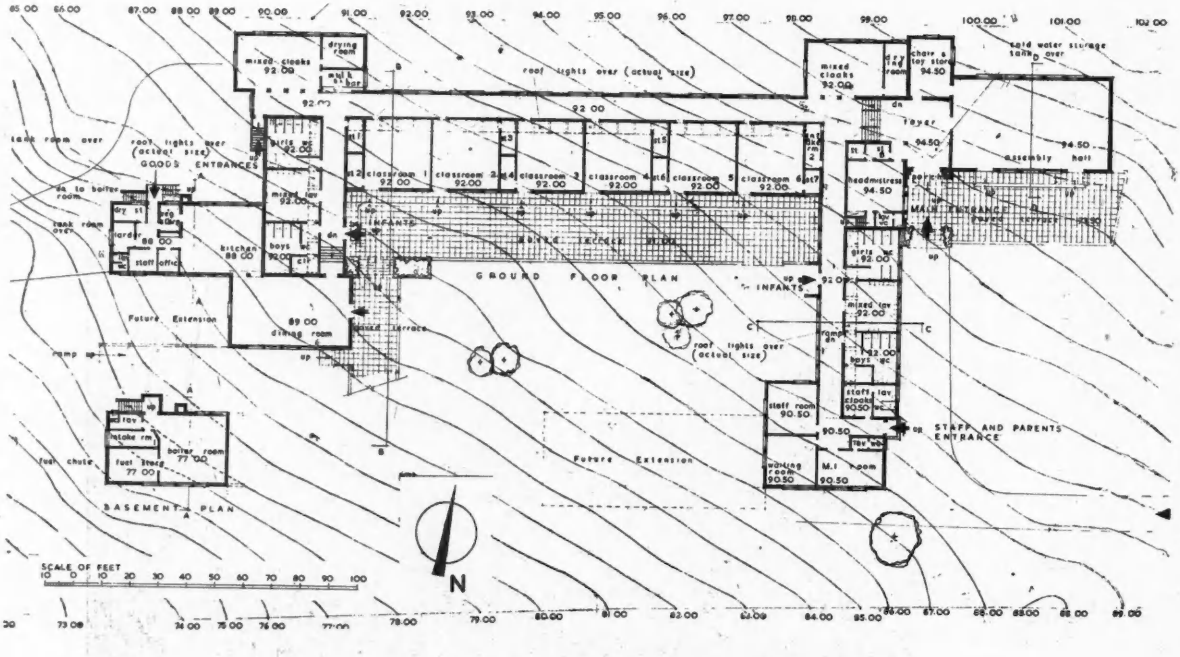
The lowest tender was submitted by Messrs. E. Thomas and Co., Ltd., of Falmouth, and amounted to £54,400. The work has been completed in 18 months. Consultants for the heating and water installations were Messrs. E. Wingfield-Bowles and Partners, of Westminster, S.W.1, and the quantity surveyor was Mr. W. B. Bond, F.R.I.C.S., of Truro and Birmingham.

Sub-contractors and suppliers were :—

Heating and hot water installation, Z. D. Berry and Sons, Ltd. ; electrical installation, D. Alldridge ; steelwork, Dawnays, Ltd. ; metal windows and doors, West Bromwich Casement and Engineering Co., Ltd. ; sanitary fittings, Adamsez, Ltd. ; cloakroom fittings, James Gibbons, Ltd. ; w.c. cubicles, Flexo Plywood Industries, Ltd. ; flat roof covering, D. Anderson and Son, Ltd. ; asbestos decking, Universal Asbestos Manufacturing Co., Ltd. ; patent glazing, Haywards, Ltd. ; pitched roofs, Universal Asbestos Manufacturing Co., Ltd. ; face concrete blockwork and reconstructed stonework, Central Cornwall Concrete and Artificial Stone Co., Ltd. ; suspended ceilings, " Celotex " ceilings suspended on Anderson's construction, fixed by Jenkins and Sons, Ltd. ; door furniture, James Gibbons, Ltd. ; classrooms and dining-room floors, Granwood Flooring Co., Ltd. ; assembly hall floor, Onsite Flooring Co., Ltd. ; kitchen, etc., floors, Limmer and Trinidad Lake Asphalt Co., Ltd. ; staff, administrative offices and entrance foyer floors, Semtex, Ltd. ; playground surfaces, Selleck, Nicholls and Co., Ltd. ; paint, Walpamur Co., Ltd. ; blackboards and furniture, Wake and Dean ; and classroom cupboards and portable stage sections—to special design—E. Thomas and Co., Ltd.

View of foyer, looking towards assembly hall.

Classroom, showing north window lighting.



Fire Protection: The Architect's Responsibility

Mr. Eric L. Bird's Address to the R.I.B.A.

ARCHITECTS had always been aware that they had a primary responsibility for the fire safety of the buildings they designed, said MR. ERIC L. BIRD, M.B.E., M.C., A.R.I.B.A., in a paper on "Fire Protection: The Architect's Responsibility," at a meeting of the Royal Institute of British Architects on Tuesday, November 27, from which we print the following extracts. Mr. Martin S. Briggs, hon. secretary, was in the chair.

In recent years, said Mr. Bird, the overall problem of fire protection had been altered and extended by research and by new features in urban and community living which called for a new survey and a new assessment of the architect's part in its solution.

First, architects no longer regard themselves solely as designers of single buildings which inevitably used to be set in solitary state amid an agglomeration of unplanned, speculative construction. To-day, through town planning, they are operating in a wider sphere. The neighbourhood unit, the civic centre, the industrial area—even the whole town—have become their business. Inevitably, they are as much responsible for the fire safety of the urban area as they are for its other characteristics, such as its density, its traffic circulation, its daylighting and air, its amenities and its appearance. Their concern with the individual building, of course, remains.

Second, during the last half-century there has been a marked growth in the size of individual buildings, particularly in the centres of cities. This tendency has introduced a corresponding increase in the difficulty of preventing the spread of fire through enormous interiors. More important, the problems of crowd handling and means of escape have become greatly magnified.

Third, the bulk of goods stored for the use of ever larger urban communities has greatly increased. Many of these goods are themselves combustible, or the materials used for wrapping them are. The chance of huge fires beyond the control of the most efficient fire brigade has steadily grown.

Fourthly, and most important, a fire in a warehouse or factory is no longer merely a spectacle for the populace and a rebuilding job for an architect and builder. The loss of productive capacity, of manufactured goods or of raw material is a loss to the nation, particularly to one like Great Britain, which lives by manufacture and commerce.

How great is this fire waste? The insurance companies report an annual loss of some £20,000,000, but that figure takes no account of consequential losses. The total annual bill for fire waste, in fact, cannot be stated in figures, but clearly it is far too large.

Protective Technique

Although it is as old as civilisation itself, the technique of fire protection first began to assume its present form in the second half of the nineteenth century. Fire disasters and loss of life were beginning to grow to catastrophic proportions.

The Fire Offices' Committee of the tariff insurance companies was formed in 1868, and soon started tests of fire-extinguishing appliances and fire doors, work which was later extended to the fire resistance of elements of construction. The British Fire Prevention Committee, which included leading architects, was formed in 1899 and was active until 1924. Largely as a result of the research work and propaganda of these two bodies, much legislation was passed. The Public Health Amendment Act, 1890, various Factories Acts, the Celluloid and Cinematograph Film Act, 1922, as well as private Acts such as the London Building Acts gave various authorities powers to control construction and means of escape in respect of fire. It is sometimes overlooked, also, that the Model Building Bye-laws are concerned with fire resistance as well as with sanitation and stability of structures.

In 1935 the Fire Offices' Committee opened their first Fire Testing Station at Elstree, following the publication of British Standard Definitions for Fire Resistance, etc., in 1932. These two events started truly scientific fire research in this country. During the last war the activities of fire defence and fire raising gave great impetus to research, and in 1946 the Government and the F.O.C. together reorganised the whole work under the control of two bodies.

The first of these two bodies is the Joint Fire Research Organisation of the Department of Scientific and Industrial Research and the Fire Offices' Committee, now commonly known as the J.F.R.O. The Fire Offices' Committee presented their testing station at Elstree to the new organisation, and new buildings are now being provided there. The J.F.R.O. is unique in being a joint concern of Government—the D.S.I.R. —and industry—the F.O.C. At the same time the latter established the Fire Protection Association as an independent body to study fire technology generally and to give advice. Thus the whole subject is now in the hands of two organisations which work in close co-operation with one another.

The Architect's Interest

I think it is not unfair to say that the architectural profession to-day does not take the interest in the fundamentals of fire protection that it did in the days of the British Fire Prevention Committee. However, whether controlled by regulations or not, most architects follow good practice in construction and the planning of means of escape, on lines such as those laid down by the L.C.C. But I think they need a better understanding of basic principles and a knowledge of research findings to obtain that element of reasonableness which most building regulations in the country require. So equipped they can argue with the local authority official on his own ground, they can avoid the risks which one sometimes sees incurred with new materials and forms of construction and, most important of all, they can make a positive contribution to advance in fire-protection technique. Most architects can speak from first principles on matters of planning, stability of structures, lighting, sanitation and acoustics, but very few on fire protection.

The community protects itself against the fire menace in three principal ways. It pays insurance premiums; it maintains brigades of highly trained professional fire fighters; it controls construction and planning.

The technique of fire fighting has been brought, in the last half-century, to a high degree of efficiency and organisation. One item of Fire Service work calls for special mention here. The Fire Brigades Act, 1947, made it the duty of local fire authorities (counties and county boroughs) to provide guidance on matters of fire protection. The Fire Protection Officer of the fire authority is an adviser whose services are free to architects and building owners, and who may well be called in to look at plans in their early stages and to advise on them.

Automatic means of extinction are also a powerful agent in keeping down fire losses. First in importance is the sprinkler system, which annually saves a volume of damage that cannot be measured and which, not being regarded as news, passes almost unnoticed. The new United Nations building in New York is sprinklered throughout. Because of their efficiency in extinguishing incipient fires, sprinklers can make tolerably safe the enormous buildings which are erected to-day with extensive areas of undivided floor space.

Mention should also be made of automatic fire alarms, which are of special use in locked stores or in buildings which are largely out of use at night or during week-ends.

Testing of Structural Elements

Turning now to that part of the subject which more directly concerns architects, we come to the work which has been done at Elstree since 1935. It was to ascertain precisely the fire resistance of elements of structure that the Fire Testing Station was established.

A first step in this study was a definition of terminology and the determination of what constituted an average fire and how such a fire could be simulated in a standard or repeatable manner. Against such a standard fire, structural elements could be tested and compared with one another. This was done in the inter-war period by a committee of the British Standards Institution, on which the R.I.B.A. was represented, which produced *British Standard Definitions No.* 476. This document is the essential basis of all fire testing in Great Britain. Its principal feature is the "time-temperature curve," which defines a theoretical fire in terms of a growth of temperature in time.

The result of a test is stated in terms of time, namely, how long a given element of structure will withstand without physical failure or the transmission of heat (beyond a prescribed degree) the steady build-up of the standard fire in the furnace and continue to perform its designed function. Elements of structure that have been tested are therefore graded in *hours* according to their performance. B.S.D. 476 lays down the following grades: Grade A, 6 hours; Grade B, 4 hours; Grade C, 2 hours; Grade D, 1 hour; and Grade E, ½ hour.

The following give an impression of the relative fire behaviour of ordinary structural elements:

Walls.—9-in. and 11-in. brick walls in bricks of clay, sand-lime or concrete are Grade A. A 4½-in. wall, plastered both sides, is Grade D. Partition block walls varying in thickness from 4 in. to 2 in. and of different classes of aggregate range from Grade C to Grade E. Solid wood-wool slab partitions, 2-in. thick and plastered both sides are Grade D.

Floors.—The ordinary 9-in. by 2-in. joisted floor with ½-in. t. and g. boarding and lath and plaster ceilings is Grade E. The resist-

ance of the solid rod-reinforced concrete floor depends partly on the thickness of cover to the steel, but mainly on the overall thickness. A properly constructed 3½-in. thick r.c. floor reached Grade E, a 5-in. floor is Grade C, and a 7-in. floor Grade A.

Columns.—The 8-in. by 6-in. R.S. stanchion without protection failed in 11 minutes. A protection of 4½-in. brickwork, with web spaces filled, raised it to Grade A. The normal 2½-in. r.c. protection (1:2:4 mix and Class I aggregates) gave Grade B; a similar protection 1½ in. thick gave Grade C. A protection of plaster 1 in. thick on expanded metal lathing gave Grade D.

The "Fire Load"

It is commonly said that a building burns, whereas truly a building fire has two fuel components, namely, the combustible substances in the contents and any combustible parts of the structure of the building itself. The fuel content arising from the occupancy may be, and usually is, of much the greater importance. Therefore, in determining the degree of fire resistance of a given building at the design stage, the use to which that building is to be put is of first importance.

All the occupancies commonly met with have been studied and classified. They are classified in two ways, namely, according to the ease with which they can become ignited and according to the amount of heat their burning will produce.

The potential evolution of heat in a building fire is termed "the fire load." It is computed by measuring the weights (in lb.) of the combustible materials, multiplying them by the calorific values (in British Thermal Units) and dividing by the floor area (in sq. ft.). Average fire loads have been worked out for the majority of common occupancies, as in Table I, which gives some typical ones.

TABLE I

Occupancy	*B.Th.U. per sq. ft.*
Hospital ward	8,000 or less
Residential	27,200
School classrooms	29,600
Office occupancy (with light files) ...	58,400
Textile factory	200,000
Library	200,800
Heavy file store	332,000
Textile warehouse	500,000
Book store (filled)	2,000,000
Rubber warehouse	2,000,000 and more

Fire Resisting Construction

The research work which I have briefly outlined makes possible the provision of structural elements which are known to resist the burning out of the contents. The basic purpose is economy in building costs.

The proper use of fire-resisting construction is to confine the fire and prevent it spreading throughout the building or to adjacent buildings. Therefore, fire-resisting elements of construction should be used to form compartments which are fire-tight as far as is practicable. This means that compartment walls, floors and supports in a fire-resisting building should have the same minimum grade of fire resistance. Also, staircases, lift shafts, ducts and doorways between compartments should be protected with appropriate fire doors to prevent the spread of fire by what is termed "flue-effect" through them. Some of the most disastrous fires have occurred in fire-resisting buildings where doorways, staircases and lift shafts were not properly cut off. Compartmenting is an essential in the huge, modern building of to-day.

Lack of adequate precautions against "flue-effect" in large buildings—the spreading of smoke and hot gases up the stair wells and lift shafts—is, in my opinion, one of the most serious defects in present-day planning, though not, of course, in the area controlled by the L.C.C.

The Spread of Flame Test

During the last war there was added to B.S.D. 476 a test for assessing the rate of flame spread across the surface of materials. This addition was made necessary by the growing tendency to use as linings to buildings (i.e., as substitutes for plaster) various sheet materials, the fire properties of which were imperfectly appreciated. A series of disastrous fires, where the lining material was observed to spread flame very rapidly, brought this matter into prominence. The test classifies materials into four groups: Class 1, *Surfaces of Very Low Flame Spread;* Class 2, *Surfaces of Low Flame Spread;* Class 3, *Surfaces of Medium Flame Spread;* Class 4, *Surfaces of Rapid Flame Spread.*

Architects should pay attention to the possible grave increase of fire risk through a widespread use of those in Classes 3 and 4.

Fire Grading of Buildings

The Fire Grading of Buildings Committee, which was set up jointly by the Building Research Board and the Fire Offices' Committee, produced in 1946 a report, *Post-War Building Studies No.* 20, which takes all the work I have outlined to its logical conclusion, namely, the classification of building types according to their fire hazards and the specification of appropriate grades of construction for each.

Fire grading postulates the restriction of user to certain classes of construction. Up to the present most local authorities, such as the L.C.C., have required one or two types of fire-resisting structure of high grade because they could not control change of occupancy. With the much closer control of building now being exercised through town planning, this kind of uncontrolled change of user is beginning to disappear and the way is becoming open for the proper application of fire grading.

The Fire Grading of Buildings Committee also agreed that British building structures could be classified into seven types in terms of fire-resistance. Types 1, 2 and 3 are fully fire-resisting (or "protected" to use the committee's term) for 4, 2 and 1 hours respectively, and are desirable for buildings with high, moderate and low fire loads.

Recognition of this classification and its adoption by designers is still in the future. Meanwhile, the classification has certain obvious advantages, such as providing architects with guidance as to the type of construction that should be used to house a given occupancy. At the same time, because it sets standards of performance and does not necessarily specify materials, it does not impede the architect's choice of materials nor his freedom in design.

The Dwelling House

The traditional house of brick or stone, tile or slate, joisted and boarded floors and plastered walls and ceilings has a fire performance that is fairly good and gives reasonable time in which occupants can escape or be rescued. For the normal two-storey dwelling, I see no reason why a higher standard should be demanded. But any constructional changes which might result in a lower standard require careful study.

The J.F.R.O. maintain a nation-wide statistical service covering all aspects of fires. A study of the incidence of fires in post-war houses has revealed that there have been proportionately four times as many serious fires in permanent non-traditional houses (of all types) as in traditional houses.

There seem to be two principal elements in these prefab. fires. The first is the use of combustible linings for interior surfacing instead of plaster or plasterboard. The second is the substitution of a metal flue pipe in a casing for the customary bye-law brickwork flue. This experience points the moral that departures from accepted methods of construction should not be made, nor should new materials be employed without a careful and fundamental study of the potential changes in fire hazard they may introduce.

Conflagrations

Finally we come to what is primarily the town planning side of the subject. In planning and building new towns and parts of old towns we ought to make sure that the resulting built-up areas are conflagration-proof. This is not difficult in normal small house development, provided we avoid the use of combustible roof surfaces on a wide scale. But the tendency to zone for specific uses may result in the creation of conflagration hazards in commercial and industrial areas.

Fortunately, in central urban areas, the modern tendency to adopt open planning for reasons of light, air and traffic circulation, together with fire-resisting construction of the necessarily large buildings, helps greatly towards a reduction in the risk of conflagration. Factories, on the other hand, usually have top-lighting and are built close together; moreover, they are generally built with unprotected steel framework which is not fire-resisting, and they frequently house fire-hazardous processes or combustibles in large amounts. There is some danger that conflagration risks may be created in these planned industrial zones, if what experts call the "exposure hazard" is not studied. The risk can be appreciably reduced by a general adoption of sprinkler systems in industrial areas.

OBITUARY

G. H. Grayson, M.A., F.R.I.B.A.

We regret to announce the death, which occurred at Great Milton, Oxon, on November 23, of Mr. George Hastwell Grayson, M.A.(Cantab.), F.R.I.B.A., late of Liverpool. He was 80.

Mr. Grayson began his architectural education by being articled to Willink and Thicknesse, and he began practice in 1897 at Liverpool. Among competitions which he won were for secondary schools at Liverpool and at Bootle; Montgomeryshire Infirmary; Liverpool Hospital for Consumption; and Southport War Memorial. From 1912-14 he was president of Liverpool Architectural Society and a member of the R.I.B.A. Council; and from 1923-25 he was a member of the R.I.B.A. Practice Committee.

Among Mr. Grayson's works were Liverpool Consumption Hospital, Port Sunlight Hospital, a church at George's Plain, Jamaica, schools for Liverpool, Bootle, Cheshire and Cumberland education committees, many private schools, Lloyds Bank (12 branches), and other banks, and extensions to Selwyn College, Trinity Hall and Clergy Training College, Cambridge, and to St. Aidan's College, Birkenhead.

Redmond hydro-electric scheme, Ontario.

BUILDING OPPORTUNITIES IN CANADA

A Long-Term Market for Manufacturers

CANADA, which has, he thinks, the greatest potential of any country in the world, was the subject of a talk given by MR. IAN M. LESLIE, Hon.A.R.I.B.A., at the Building Exhibition on November 22.

Sir Moir Mackenzie, K.B.E., C.M.G., was in the chair.

After briefly describing a tour of the Dominion made recently on behalf of *The Builder* newspaper, by Mr. John Perks and himself, Mr. Leslie said that it was first necessary to disabuse the mind of anyone rash enough to think that Canada was still a "rawhide" country. Sharing a boundary line of thousands of miles with the United States, it would be surprising if she had not absorbed much of that country's great technical advances.

HIGH CANADIAN STANDARDS

"Canada, however, is a highly civilised and technically minded nation in her own right," said the speaker. "Her standards of architecture are high, and she constructs her great buildings to a standard of workmanship and quality of materials such as we do not often see nowadays over here. Moreover, she has a tremendous programme of public and private investment in hand. Last year this totalled $3,596 million, or at current exchange rates about £1,168 million. Canada is therefore building at about twice the rate of Great Britain, in comparison with her population, and there seems to be no reason why she should stop. She has the greatest potential of any country in the world. She stands where the United States stood 50 years ago, with her resources virtually untouched but with all the technical advances of a half-century ready to hand. To grain, timber, fisheries and non-ferrous metals must now be added titanium, natural gas and deposits of oil and iron ore thought to be the richest in the world. All these developments bring construction in their wake, and buildings require materials.

"Where can Great Britain come in? What can she do to help Canada and to help herself? It would be easy to over-simplify the problems which face the would-be exporter either of materials or of building services. First, a few words about the background to selling. Friendly though the individual Canadian is, as a nation Canada is puzzled and a little hurt at the course things have taken recently. Anglo-Canadian trade since the exchange crisis of 1947 has been dominated by the dollar problem. Through insufficiency of dollars we have been compelled to deny ourselves Canadian products which Canada wanted to sell and we to buy, but which we could not pay for. Moreover, there is little reciprocity between trades. We seek raw materials—grain, timber, oil, and so on. They take from us manufactured goods and semi-processed materials; seldom is any particular trade channel two-way.

"Intending exporters of building materials and plant must therefore expect to find some resentment in various manufacturing quarters in Canada directed against their efforts. They will find the market a tough one and the average Canadian shrewd; he may fling his hat in the air at a baseball or ice-hockey game, but he usually remembers to catch it as it comes down.

"To be blunt, Canadians must try to see the picture as a whole; they must realise that our purchases of materials must be conditioned by the extent to which they themselves take our manufactured goods. Even harder, they must accept that since the balance of dollars is with them, they must first buy from us before they can sell.

CLEARING THE AIR

"In this highly competitive world, one has every sympathy with the Canadian manufacturer; and I believe (added Mr. Leslie), that by his own innate horse sense and through the great work being done to clear the air by certain people on both sides of the Atlantic, especially by Mr. James Duncan, chairman of the Canadian Dollar-Sterling Trade Advisory Council, he is learning to appreciate the position."

Fortunately, British manufacturers had an opportunity to get into Canadian markets without too great displacement of the home manufacturing effort. Canada imported a volume of building materials which in 1948 totalled $300 million. Only $35 million of this came from Great Britain, the remainder coming from the U.S.A. Mr. Duncan had calculated that the potential target of exports of United Kingdom building materials in that year could have been $86 million, or nearly two and a half times its actual figure. So there is plenty of elbow room.

DIFFICULTIES AND SOLUTIONS

The speaker continued: "What so far has stopped United Kingdom manufacturers from greater developments? The reasons, I think, are five in number. They are:—

1. The expense of breaking into a market against home and U.S.A. competition;
2. Difficulties of keeping delivery times, and also high breakage risks due to trans-shipments;
3. The difficulty of after-sales servicing other than consumer goods;
4. Technical difficulties connected with Canadian standards and by climatic conditions;
5. The attitude of mind of many manufacturers who say: 'Why should we bother about Canadian markets? We're doing very nicely on the home market and in any case what is there in it for us?'

"These difficulties are plain. Let me try to offer some solutions:

"First, I do not wish to minimise the risk taken by a manufacturer in trying to break into the Canadian markets, but I would remind him that he has certain positive weapons to his hand.

(*a*) Our name for quality and performance still stands high. For this the exploits of the British car manufacturers must be given much of the credit, though one does not forget the sterling efforts of certain other manufacturers in the building plant and materials lines.

(*b*) In certain provinces, notably the Maritimes and British Columbia, the sea-

haul is actually in our favour. It could be also in the Great Lakes if we could successfully run a service of ships from Great Britain through the St. Lawrence seaway up to Port Arthur, Duluth and Chicago.

(*c*) Devaluation still is in our favour, though not to the same extent as originally.

(*d*) Other things—notably quality, price, delivery and service—being equal the Canadian would prefer to buy British.

"Points 2 and 3—delivery time and servicing—can be met if manufacturers will get together on a sharing basis. A solution in part could be the setting up by a group of firms of a showroom organisation, backed with warehouse and servicing facilities. This should probably begin in Toronto, the natural trade and communications fulcrum of Canada. By such a scheme manufacturers could get an initial foothold, sharing premises and overheads. This step was one which we were assured would be welcomed in Canada. It has already been taken with success by a group of British scientific instrument makers.

"Whether this is the job of the Federation of British Industries, or of an organisation on Building Centre lines, or whether it comes about through the initiative of manufacturers themselves, I do not know. But it seems to be a step worth considering.

"The fourth point—technical difficulties connected with Canadian standards and with climatic conditions—can best be met by personal visits and by research on the spot, though I believe that the Canadian Standards Association, by agreement with the British Standards Institution, has arranged facilities for testing on this side. And here I would say that any manufacturers who visit Canada should take their top technicians with them. If they are selling products which are affected by weather, they may find it more valuable, if less pleasant, to surrender the delights of the Canadian summer for the useful lessons of the winter.

A WORTH-WHILE EFFOR T

"What of the last point, the attitude of mind that says: 'What's the use?' This is hardest of all to overcome for one has much sympathy with manufacturers to-day who have their own troubles on the home and sterling markets. But no one can indefinitely stand aloof from the struggle for national existence. Let me quote something to you: 'In the third quarter of 1951 we had a deficit with the European Payments Union of £183 million. In October alone it was £89 million. . . This deficit is on a scale which will rapidly exceed our quota, and, indeed, will threaten the stability of the Union itself. . . . The dollar area continues to be the hard core of our balance of payments problem, and we must continue to build up our exports to the United States and to Canada. . . . Otherwise we shall find ourselves to be bankrupt, idle and hungry.'

"These words are Mr. Butler's, Chancellor of the Exchequer, but they have been paraphrased by every Chancellor since the war ended. They have a national, not a political significance.

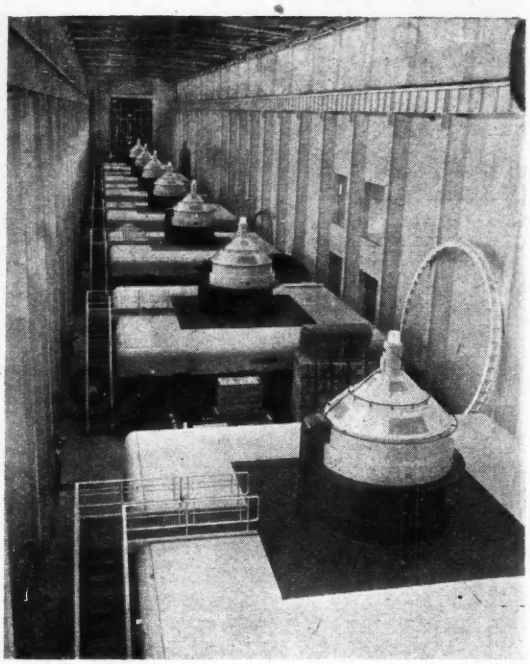
"What I ask then," said Mr. Leslie, "is for every British manufacturer of building materials and plant who thinks he has a good and competitive product to look into the possibility of entering the Canadian market. Moreover, I ask him to do it as a matter of urgency. He will find many ready and anxious to help him. Mr. Tom Brockie of the Ministry of Works export branch will be able to put him in the picture with regard to useful lines. He will find the Board of Trade and the Export Credits Guarantee Department and the Federation of British Industries—all of whom I am very pleased to see represented here to-day—able to give advice and practical assistance. He will even get help from the Treasury, which will pass his travelling costs as a trading expense!

"Canada is a great country with a great potential. It offers what I believe every manufacturer is looking for—a long-term market. It also offers opportunities to architects, builders and to operatives who wish to emigrate there, but I have already said something about this in another place. The opportunities are many. On our trip we found calls for such goods as mobile hoists, excavating plant, hospital equipment, lifts, mechanical tools, steel partitioning, sanitary-ware, nails, paints, linoleum and even prefabricated houses, to mention only a few. This was, of course, in addition to glass and cement which already form the bulk of our building exports to Canada.

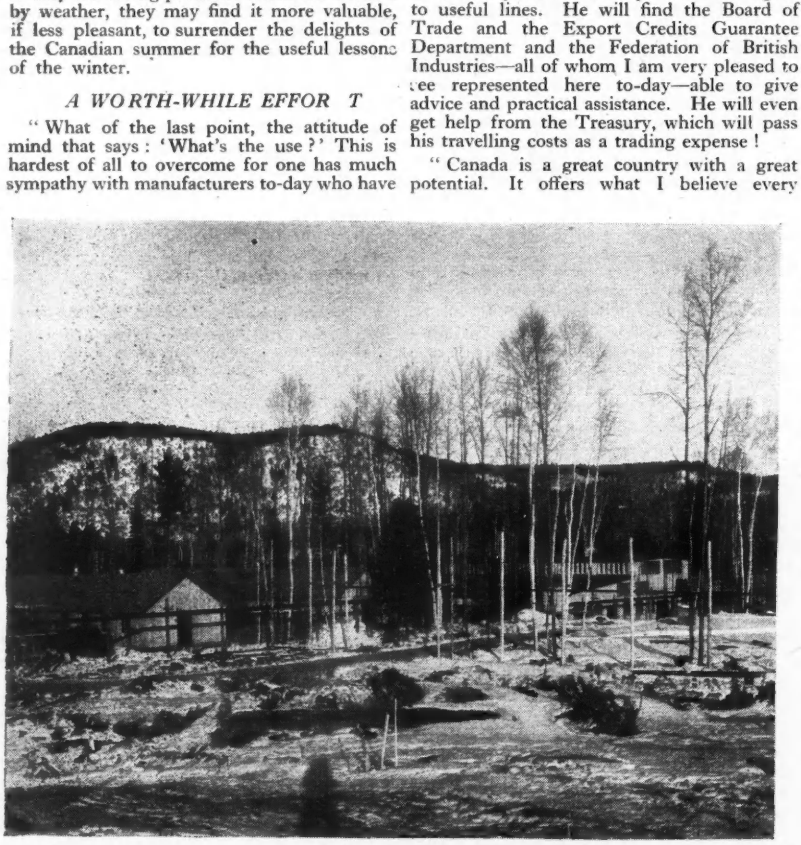
"You may ask why we should export things which we need at home, but it all depends on which need is the greater. We must have Canadian grain, aluminium, asbestos, etc. Without them our building at home would be seriously handicapped, so export of building materials and fitments to Canada is a matter of self-preservation. We are not, in any case, likely to export enough of anything to bring building at home to a standstill, and we ought, in this matter, to try to take a wide outlook and think of the stability of the British Commonwealth as well as of our own Islands.

"My final word is: Go and see Canada for yourself. Whether you are actuated by patriotic feelings, by hopes of commercial gain or, as I suspect most are, by the good, solid satisfaction of taking on a difficult job and seeing it successfully through, I hope you will look at this market, and if you can, enter it.

"I commend it to you in the words of the Duke of Edinburgh: 'Canada is a good investment'."



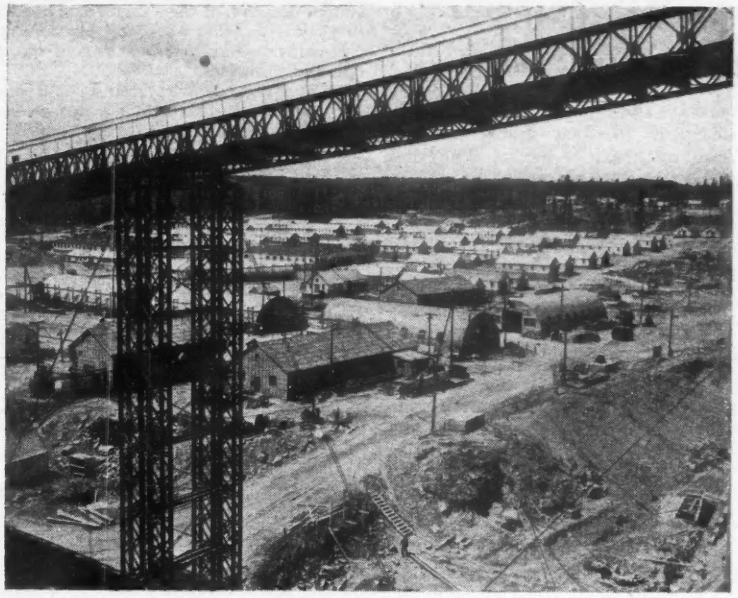
View of dynamos at Hydro's Des Joachim's plant, Ontario.



Staff accommodation at Hydro's La Cave Development, Ottawa River.

DISCUSSION

In opening the short discussion which followed, THE CHAIRMAN said he wished to endorse everything which Mr. Leslie had said. There were opportunities in Canada, he added, but the prospective exporter would have to go after them. They would not fall into his lap. He had himself made about 25 crossings between Canada and this country. He would urge the industry to pay close attention to what the speaker had said. Canada, in his opinion, had before it a greate



A section of the conveyor system for pouring concrete at the Pine Portage main dam. The conveyor is supported by Bailey Bridge structure.

future than any other country in the world. Offering advice to would-be exporters to Canada, he said that it was first necessary for them to see that they had a product which the Canadians wanted; Canadians would also want to see on the spot the actual stuff which they were being asked to buy. Mere promises were useless. Immediate decisions would be required if any business was to be transacted. The speaker added the warning that unless the opportunity to get into Canadian markets was grasped now by British manufacturers it might possibly be lost for ever.

Proposing a vote of thanks to Mr. Leslie, MR. SOMERVILLE SMITH, comptroller-general of the Export Credits Guarantee Department, said that any venture taken in Canada would need to be backed up by enthusiasm to carry it through. It was no good hitting and missing. His department had available £500 million with which to assist financially anyone who was prepared to try to do business in Canada. They could also offer advice and guidance on almost all aspects of the matter. The most surprising thing was that so far only a few people had shown a desire to take the risk. Describing the functions of his department, Mr. Somerville Smith said that if an exporter was unfortunate enough to lose money on a venture, they would, in all legitimate cases, withstand 90 per cent of the loss.

A Canadian consultant engineer who took part in the discussion agreed that his country offered tremendous opportunities. It was, however, advisable for anyone who was thinking of going out there to remember that as the country developed circumstances were apt to change quickly, he said. Towns grew year by year, and it could be misleading to rely too much on information which had had a chance to become outdated.

To send any products out to Canada which were less than good was to ask for trouble, he warned.

Two architect members of the audience inquired about the possibility of members of their profession going from this country to Canada, and in reply the chairman said that so far as he was aware, an architect wishing to develop a practice in Canada was, in effect, in the same circumstances as any other firm wishing to set up a branch plant there. Branch plants were encouraged, therefore he saw no reason why an architect should not be given the chance to earn dollars in the same way as the man who wanted to sell boots and shoes, for instance.

THE BUILDING TRADES IN CANADA

For the information of building trade workers, the Immigration Department of the Province of Ontario (12, New Burlington-street, London, W.1) has issued "Opportunities for Building Trades." Useful information and current rates of pay are included. Hourly wage rates are based on a 44-hour week and all hours in excess are paid for at time-and-a-half. Deductions for unemployment insurance are made from the employees' earnings at rates of 8 or 9 cents per day worked. Workmen's compensation for building workers in Ontario is wholly borne by the employer. Generally speaking, building trade operatives are required to become union members within a specified period which may vary from 15 to 60 days. Present wage rates range from $2 per hour for bricklayers in Toronto to $1 for painters and decorators in London (Ontario).

The importance is emphasised of all skilled operatives who decide to emigrate taking proof of qualifications with them, as no person is permitted to work at any particular job unless he is qualified at his own trade.

SALE OF COUNCIL HOUSES

By B. S. TOWNROE, Hon.A.R.I.B.A.

MR. HAROLD MACMILLAN, Minister of Housing and Local Government, announced on November 13 that he hoped soon to give Local Authorities guidance in respect of the sale of existing council houses to tenants. The situation to-day resembles in many respects that which faced Dr. Addison, who was Minister of Health in 1920. Since then Dr. Addison has become Lord Addison, and was one of the members of Mr. Attlee's recent Government.

In 1920, Dr. Addison told the House of Commons that plans had been approved for over 200,000 houses, but that in fact work was only begun on about 25,000 houses, and fewer than 30,000 tenders had been finally approved. These showed an increase in cost of about £100 for each house in six months. Dr. Addison stated: "It is perfectly evident that an increase like that, with all its disastrous consequences, cannot go on, and the only way it can be compensated is by getting a check to the rise in the cost of materials, by getting an understanding whereby we can get a greater output from labour and a proper national understanding with regard to wages. We have commonly, and often quite justly, blamed the trade unionists for not helping as I think they might have helped in this matter. I think Labour has lost the greatest opportunity of its political life up to the present, because there is nothing more unselfish than this campaign."

Those strong words had little effect, and by the autumn of 1920 Dr. Addison had to agree to requests from local authorities for general guidance on the sale of houses. A memorandum was therefore issued and placed on sale for a penny. This dealt with the mortgage of property by local authorities, the limit of loan which might be advanced, and the amount of monthly or weekly instalments to form a mortgage.

Building societies, who are at the present time examining ways by which they can assist in meeting the present housing shortage, should note that Dr. Addison himself advised that the terms of the mortgage for the sale of houses by instalment "might conveniently follow the general lines adopted by building societies and similar institutions."

In view of the assertion that to sell council houses would mean that the owners would allow them to deteriorate into slums, one of the objections raised in the House of Commons last week, it should be noted that the local authorities were advised by Dr. Addison to insert in the terms of the mortgage: "covenants on the part of the borrower to repair and maintain the premises in good condition, and not to lease without the council's consent."

The financial basis of the transaction will be very different to-day from that of 30 years ago, when 6½ per cent. per annum was the rate of interest on which sales were conducted. In those days the purchaser had to make an immediate cash payment on completion of the purchase of at least £20 in a case where the period of repayment was 15 years, increasing to £50 where the period of repayment was 25 years.

It will be difficult to-day for Mr. Macmillan's official advisers to calculate the number of transactions likely to be proposed. No doubt, however, the officers of the Ministry of Housing have already in their possession details of the request made by local authorities in all parts of the country to be allowed to sell their houses, and so to do something to reduce the heavy burdens on the present generation of ratepayers.

Further, there will be cases where a request to buy may well have to be rejected. Indeed we must expect that when Mr. Macmillan issues the memorandum to local authorities it will be found that he, like his Socialist predecessor, Dr. Addison, has made it obligatory that the sale price and the conditions should be approved by the Minister of Housing and Local Government.

There will, of course, be cases where present tenants will be glad to pay cash down and not buy on the instalment system. The scheme no doubt will provide for direct and outright sale, and also for sale of houses by instalment.

BUILDING INCENTIVE SCHEMES

28 per cent. of Sites Only Covered in England and Wales

THE Minister of Works, the Rt. Hon David Eccles, M.P., opening the Building Exhibition at Olympia on November 14, said that bonus and incentive schemes were in operation on less than one-third of the building sites. The latest Survey of Incentives (issued on Monday by the Ministry of Works) shows that in England and Wales incentive schemes based on output were in operation in June, 1951, on 28 per cent. of sites covered by the returns, and covered 41 per cent. of the total men employed on those sites. For Scotland, the figures for housing work were 11 per cent. and 12 per cent. respectively.

The scope of the survey was as follows:

In June last, all main contractors in England, Scotland and Wales on building sites with contract values of over £1,000 in the case of new work and £2,000 in maintenance and repair (but excluding housing maintenance) were asked by the Ministry of Works how many of their own operatives were paid under an incentive system of bonus payments related to output or targets. The survey did not cover sub-contractors' men or local authorities' direct labour.

Returns were received from 31,564 sites on which work was proceeding at the time, representing about 60 per cent. of the total sites to which the inquiry forms were sent. The remainder were sites on which the main contractors, for one reason or another, had no men on the site, or failed to make a return. The returns covered 347,319 men, estimated to be roughly 85 per cent. of the labour within the scope of the survey. The findings of this survey are not applicable to the remainder of the labour force in the industry, who are for the most part specialists' and sub-contractors' men or else men engaged on new work below £1,000, on all housing maintenance work, and on other maintenance and repairs below £2,000 in value.

Returns Summarised

The following table summarises the results of the returns. Only big differences between the percentages shown are likely to be significant. Small variations may be due to purely chance factors in the composition of the completed returns. The position in Scotland is shown separately, since Scotland has a different system of contracting from England and Wales, involving separate trades contracts, and the principle of incentives for all trades was accepted much more recently. National agreements providing for the operation of incentive schemes by individual contractors in agreement with their operatives have been in operation in England and Wales since November, 1947, and in Scotland since March, 1950. Up to March, 1950, the agreement in Scotland, operative from November, 1947, provided for the operation of incentive schemes only where agreed for individual trades at national level, and this happened only in the case of slaters and partially in the case of plasterers.

The general summary below shows the position in Great Britain at June, 1951. In England and Wales incentive schemes based on output were in operation on 28 per cent. of the sites covered by the return, and covered 41 per cent. of the total men employed on all those sites. In Scotland, 11 per cent. of the sites covered by the returns operated incentive schemes, covering 12 per cent. of the men. On a few sites without incentive schemes based on output, firms stated that they were operating profit sharing schemes or paying other inducements.

Tables which have been prepared show that on sites on which incentive schemes were operated the proportion of men covered by these schemes showed great similarity throughout England and Wales and was of the order of 80 per cent. This is encouraging in view of the acknowledged difficulty of operating incentive schemes which will cover all men on the site; there is generally a number of men engaged on work of a nature for which it is difficult to agree incentive targets, one of the main obstacles being the measuring of the work.

On the sites in Scotland on which schemes were operated, 51 per cent. of the men were covered by these schemes.

Analysis has shown that in England and Wales the proportion of sites operating incentive schemes varied between 15 per cent. in the Northern Region and 38 per cent. in the North Midlands. The proportion of the total men covered by incentive schemes varied from 27 per cent. in the East and West Ridings to 52 per cent. in the North Midlands.

Type of Work

The survey shows that the proportion of bonused sites and of men on them covered by incentive schemes varied widely with the type of work. Civil engineering and power station construction showed the highest proportion of sites operating schemes: 41 per cent. and 37 per cent. respectively of the sites operated schemes, covering 48 per cent. and 59 per cent. of the total men on the work. In general building work, schools were most frequently bonused, 34 per cent. of the sites operating schemes.

In Scotland, civil engineering and power station construction (including hydro-electric schemes) were also most widely bonused (19 per cent. and 25 per cent. of the sites respectively).

New Housing

In England and Wales, 31 per cent. of the new housing sites operated incentive schemes, covering 44 per cent. of the men engaged on this work. To obtain some indication of the effect of the size of contract on the introduction of incentive schemes, it was decided to break down the new housing sites into those over and those under £10,000 in value. Analysis has shown that in England and Wales approximately one-third of the housing sites were over £10,000 in value, employing two-thirds of the housing labour force and an average of 20 men per site. Of these sites, 49 per cent. operated incentive schemes, covering 53 per cent. of the total men employed on this work. On the remaining two-thirds of the sites, which were under £10,000, the average number of men employed was five, and of those sites only 21 per cent. operated incentive schemes.

The Second Girdwood Report suggested that some 50 per cent. of houses were being built under incentive schemes about two years ago; the Chief Scientific Adviser's productivity survey at about the same time disclosed a similar result, and last year's survey of incentives in force on housing work in Local Authority Direct Labour Organisations in England and Wales revealed that 60 per cent. of the organisations operated schemes. Although the present survey shows that, overall, only 31 per cent. of the new housing sites operate incentive schemes, the figure of 49 per cent. for housing contracts of over £10,000 in value probably gives a fairer comparison with the earlier surveys.

In Scotland, 13 per cent. of the new housing sites operated incentive schemes, embracing 12 per cent. of the men. On sites upwards of £10,000 in contract value (representing about one-half the total housing sites in Scotland), 20 per cent. operated incentive schemes, covering 14 per cent. of the men. Of the housing sites below £10,000 in value, only 6 per cent. operated schemes, covering 5 per cent. of the total men employed in this category.

Maintenance and Repair

In England and Wales as many as 24 per cent. of the sites engaged on maintenance and repair claim to be operating incentive schemes based on output, covering 26 per cent. of the total men engaged on this work. A recent survey of Local Authority Direct Labour Organisations in England and Wales showed that, though many were anxious to do so, only 20 of about 1,000 Local Authorities, whose direct labour was engaged on maintenance and repair work, had succeeded in evolving and operating incentive schemes, and these schemes were mainly confined to painting and decorating. The two cases are not, however, strictly comparable, as the present survey covered maintenance jobs over £2,000 (which would probably include a good deal of painting and other straightforward work), whereas the Local Authority survey covered all maintenance and probably contained a large proportion of small odd jobs.

The present survey does not reveal the type of incentive schemes operated, but

GENERAL SUMMARY

	Sites			Men		
	Total Sites returned	Sites with incentive schems	Sites with incentive schemes as per cent of total sites (% Col. 2) (Col. 1)	Total men on sites returned	Men covered by incentive schemes	Men covered by schemes as per cent. of all men (% Col. 5) (Col. 4)
	(1)	(2)	(3)	(4)	(5)	(6)
			Per cent.			Per cent.
England and Wales... ...	28,428	8,052	28	298,676	123,051	41
Scotland	3,136	337	11	48,643	5,997	12
Totals	31,564	8,389	27	347,319	129,048	37

shows that they covered 89 per cent. of the men employed on the sites in question: this suggests that many of the schemes may have been operated on a very broad basis.

Analysis of labour on site shows that the average number of main contractors' men employed on the sites covered by the returns in England and Wales was 11. On the sites on which incentive schemes were operated the average number of men employed per site was 19.

In Scotland the average number of men employed on all the sites covered by the returns was 16, and on the sites covered by incentive schemes 35. These figures probably appear larger for Scotland than for England and Wales, because in England and Wales they represent main contractors' labour only, whereas in Scotland the returns would be made by the architect for the sites as a whole.

QUICKER HOUSING

National President Points the Way

STEPS that should be taken for increasing productivity in housebuilding were described by MR. STEPHEN HUDSON, president of the National Federation of Building Trades Employers, at the National Housing and Planning Conference at Bournemouth on November 23.

Mr. Hudson said we should ask ourselves two questions, could we increase productivity generally and, if so, could we speed up the building of good homes at costs which were equivalent to lower rents and which did not involve such heavy subsidies as at present from public funds?

"There is no doubt that productivity in the building industry, though improving in recent years, is still below that of 1938 and 1939," Mr. Hudson continued. "There are many reasons for this, the main ones, in my opinion, being shortages of materials, changes in Government policy and controls.

"Housing should be regarded as an essential part of the defence programme. Unless there is a bigger reservoir of dwelling accommodation than at present, the difficulties, if war comes, of carrying out evacuation schemes, of billeting transferred workers and of rehousing those made homeless will be much more acute than last time.

"I yield to no one in the desire for good housing standards but there must be a certain amount of cutting one's coat according to one's cloth, and I am sure that those who have been on the waiting lists for years would prefer to see three smaller rather than two bigger houses being built."

Another way to increase the number of houses to be built was to employ all the agencies which were producing them between the two wars. The most active of those agencies was the private housebuilder. So long as accommodation was scarce new houses must go to those with the greatest need but, subject to this, the people themselves should be allowed to choose between buying new houses or becoming tenants of houses owned by the local authorities.

It was absurd that there should be a ratio fixed nationally between the number of municipal houses and the number built for sale when the circumstances of local authority areas varied so considerably.

"Local authorities will help to speed up house production and reduce costs if, whilst materials are in short supply, they will give the contract builder greater latitude to use substitute materials, and speed up the making of final payments," said Mr. Hudson.

STEEL RATIONING

Distribution Control from February 4

CONTROL of the distribution of alloy and non-alloy (carbon) steel, as annuounced by the Minister of Supply (Mr. Duncan Sandys) on November 12, begins on February 4 next.

The new arrangements will be similar to those in operation up to May, 1950, and no person may (from February 4)—with certain exemptions under a small quantities exemption clause—acquire or use specified types of steel unless he has an authorisation.

The authorisation will permit the consumer to acquire steel direct or to allow his sub-contractors to purchase steel. Any consumer (except a sub-contractor) requiring steel in the controlled forms who has not already stated his requirements to the appropriate department or to a regional office of the Ministry of Supply, should apply at once to the department which he normally approaches on matters of production. Small consumers—those whose requirements are 25 tons or less a quarter, including not more than 10 tons of sheets—should apply to their Ministry of Supply regional controller.

In cases of doubt, application should be made to the Ministry of Supply, Iron and Steel Division, Shell Mex House, Strand, W.C.2.

Present arrangements for allocating sheet steel and tinplate, terneplate and blackplate—which are already subject to distribution control—will remain unaltered.

The new order* covers alloy as well as non-alloy steel, but consumers will receive separate authorisations for each type and also for sheet and tinplate.

Iron and steel stockholders will again need licences to acquire controlled types of steel for resale. Existing stockholders should have submitted details of their 1950 trading in non-alloy steel to the Iron and Steel Division (I.S.1(a)) S.W. Wing, Bush House, Strand, W.C.2. Stockholders who have not already done so and all those dealing in alloy steel should write to this address giving details of their receipt into and sales from stock in 1950.

The Ministry of Supply emphasises that it will, subject to the Small Quantity Exemption provisions, be illegal:—

(a) for any firm or person to acquire or use controlled forms of steel unless an appropriate authorisation is held;

(b) to dispose of such steel except to holders of authorisations.

Orders already placed for delivery on or after February 4 will, therefore, require an authorisation.

Among the different classes of iron and steel which are affected by the Order are: Plate, heavy and medium; sheet; tinplate, terneplate, blackplate, silver-finished plate; angle, channel, tee, joist, piling section, other sectional material; round, rod, square, hexagon, flat, other section and shape (and whether black or bright); tube, pipe; wire rod; wire (whether plain or barbed) (and whether coated or uncoated); wire rope, wire strand.

Among small quantities, exemptions are: Heavy (1 ton) and medium plates (10 cwt.); sections, 4 united inches and under; channels, 3-in. web and under; joists under 3-in. web; rounds, squares and hexagons under 3-in. flats, 5-in. wide and under (1 ton); sheets, coated or uncoated (10 cwt.); tinplate, terneplate, blackplate, silver-finished plate (10 double boxes or 1 ton); tubes and pipes (15 cwt.); wire (whether plain or barbed) (and whether coated or uncoated) (5 cwt.); wire rope, wire strand (5 cwt.); alloy iron and alloy steel of any description or descriptions (2 cwt.).

* Copies of the Order—the Iron and Steel Distribution Order, 1951 (S.I., 1951, No. 2006)—may be obtained from H.M. Stationery Office. Price 6d.

SOFTWOOD AND THE BUILDER

Demand for Greater Freedom

CHANGES in the controls of softwood for the building industry were suggested by MR. A. C. PRIDDLE, joint managing director of National Softwood Brokers, Ltd., of London, when he spoke to the London Softwood Luncheon Club, on November 15. He urged that the Timber Trade Federation, in its talks with the Timber Controller, should press for a wider use of softwood now that stocks had been built up well beyond the safety line. Without much greater usage than the present rate of 1,100,000 standards a year, he said, the importers would not be willing to buy freely next year.

The need of the trade for more licences to be issued is very real, and its demand must not be dismissed merely as propaganda, said Mr. Priddle. This demand is not incompatible with our present sad economic plight, and can easily be fitted into the new pattern. Surely, with a shortage of 1,500,000 tons of steel there is room for a much greater use of timber in place of it?

As a result of the insistence on concrete instead of wooden floors at ground level, an average of a little over eight tons of cement now goes into every house. Every ton of cement requires nearly half a ton of coal to make it, so the reversion to wood for ground floors would alone save well over 300,000 tons of precious coal, or make over 500,000 tons of cement available for export.

And surely there can be no justification for enforcement by the licensing policy of the use of much more costly hardwoods so as to avoid the use of the much more suitable and less expensive softwoods?

Applications in Triplicate

Mr. Priddle continued: Is the need to economise so great that small builders must apply, in triplicate, of course, for even the smallest quantity of softwood? A builder friend told me the other day that when converting a house into two flats he had to repair a couple of window sashes, and required just a few feet of window frame. He wrote to his Timber Control area officer who, quite rightly, according to his book of rules, referred him to the appropriate department, thus involving correspondence and delay. In due time an inspector turned up from the local authority to emphasise to my builder friend the serious shortage of softwood, and the consequent need for him to satisfy himself on the necessity for the application. After another week the licence was granted.

The cost of the wood was a matter of shillings, but many times its cost must have been spent in investigating the licence application. Can our economy really afford such a scandalous waste of manpower, time and paper?

Give all small builders a small float stock and you will not only make a tremendous saving in cost, time and manpower, but, by spreading the carrying of stock, will bring a measure of relief to the trade without materially increasing the rate of consumption. An extension of the validity of licences to six months would also not only add to efficiency, but, by enabling the larger consumers to carry a working stock, would also go a long way towards spreading the burden of stockholding.

A.R.C.U.K.

Maintenance Scholarships in Architecture

THE Architects' Registration Council offer for award in June next certain maintenance scholarships in architecture. The scholarships will consist of a grant for the payment of one-third of the school fees and, when necessary, a maintenance allowance. The scholarships will be renewable from year to year until the student has finished school training. They will be available for students of British nationality who could not otherwise afford such training to enable them to attend architectural schools approved by the council.

The scholarships will be available both for students who have already begun their training and for students wishing to begin their training. Scholarships will not be granted to students who will be less than 17 years of age on October 1 of the year in which the examination is taken.

Particulars and application forms from the Secretary to the Board of Architectural Education, Architects' Registration Council of the U.K., 68, Portland-place, W.1. Copies of previous years' examination papers may be obtained on payment of sixpence. The closing date for the receipt of applications is January 31 next.

L.M.B.A.

Vacancies for Apprentices

FOLLOWING the lead given by the president, Mr. Dudley F. Cox, when he took office, the L.M.B.A. has been actively engaged during the past year in increasing the number of apprentices entering the building industry. In the course of its work, much of it done in conjunction with the London Regional Joint Apprenticeship Committee, it has greatly strengthened its association with the Youth Employment Service.

During recent months inquiries about vacancies for apprentices in the L.M.B.A. areas have been intensified, and as a result numerous lists of vacancies have been supplied to the youth employment officers, many of whom have reported that the information has proved extremely useful to them when they were addressing and interviewing boys leaving school. At the same time they have emphasised that vacancies notified well in advance of the school-leaving dates stand a much better chance of being filled than those which are not notified until near the end of term when many boys have already made their own arrangements.

To meet this difficulty the L.M.B.A. is now circularising its members asking them to notify headquarters of the vacancies they are likely to have at Christmas this year, at Easter next year and during the course of next summer.

Christmas Holidays

The London Regional Joint Committee has decided that the resolution regarding Saturdays before Bank Holidays, which is incorporated in Working Rule 4 (i), shall be applied to Christmas Eve, Monday, December 24.

In view of this decision, the L.M.B.A. has circularised its members, calling their attention to the necessity for taking ballots on jobs, if possible in writing, and having these properly recorded. Difficulties have occasionally arise in the past over the validity of votes, allegations sometimes being made that all the operatives were not present. It is suggested that these difficulties would be overcome by circulating to the men, preferably through their accredited representatives, a form similar to the specimen below:

Christmas Holidays, 1951

By a decision of the Regional Joint Committee the resolution regarding Saturdays before Bank Holidays applies to Monday, December 24, 1951.

I do/do not wish to work on the Monday.

I understand the decision of the majority will be accepted.

Apprentices at Work

One of the notable successes of the Building Exhibition has been the apprentices' stand, which the L.M.B.A. sponsored. The L.M.B.A. had the co-operation of many of the other bodies connected with the building industry in organising the display, and the active assistance of several of the building schools. The boys at work—they were drawn from L.M.B.A. firms employing apprentices—attracted wide attention, and there was always a crowd round the stonemasons' apprentices.

Club's Picture Gallery

The attraction of a cup of tea in comfort led to a natural demand for membership of the L.M.B.A. Club. This year the organisers tried the rather daring experiment of having a cartoonist at work in it. To some it may have sounded rather like introducing a sideshow into the Athenæum, but from the first day it was an unqualified success. Poli, the cartoonist, did over 250 cartoons during the course of the exhibition, and the walls of the club became a veritable picture-gallery. Now the L.M.B.A. is sending them to the Poli "victims." Among them are the many mayors of London Boroughs who visited the exhibition at the L.M.B.A.'s invitation, many M.P.s for London constituencies, and numerous notabilities in the building industry.

INSTITUTE OF BUILDERS

Examination Successes

Successful candidates in the Institute of Builders' Licentiate and Associate Diploma examinations this year were:—

LICENTIATE DIPLOMA

P. D. Allars, London; D. A. W. Astle, Gillingham; C. T. Bailess, Bangor; E. Barker, Leeds; B. D. Bliss, Shrewsbury; F. G. T. Booth, London; A. A. Brookes, London; F. G. Brookes, London; A. D. Bull, Eastleigh; J. Burrows, Nelson; J. D. Burrows, Gerrards Cross.

E. I. Challacombe, Swansea; G. G. Charlton, Leybourne; D. G. Clapton, Swansea; W. Clough, Shipley; H. Crawshaw, Wrexham; D. H. Crowch, London; R. G. Davies, Birmingham; S. W. Dean, London; P. Dorman, Barnsley; A. J. Eastabrook, London; J. P. Elliott, Padiham; F. Eustace, Burnley.

R. A. Foster, Sherwood; J. Garrett, Loxley; H. W. Gibbard, London; T. Giblin, Doncaster; G. Gilbert, Mexborough; H. D. Goodhand, Grimsby; D. Greenwood, Rochdale; L. Grubb, Enfield.

R. E. Hallett, Woodford Green; D. V. M. Harding, Whyteleafe; L. F. Harper, Birmingham; C. P. Harrington, Sidcup; A. F. Hawley, Greenford; A. R. Hayes, Ewenny; C. J. Hazell, Bristol; D. J. Higgins, Buckhurst Hill; F. Hogan, London; F. C. Hogg, Hereford; F. R. Howard, Chatham; R. Hunt, Leicester, G. A. Johnson, Leicester; A. B. Keith-Walker. Thornton Heath; D. G. Kirby, Leeds; M. F. Lacey, Lewes; J. R. Lucas, Lincoln; S. G. Martin, Brinsworth; R. T. Matthews, Greenford; J. P. Mexham, Birmingham; K. Neal, Hull.

D. S. Palmer, Southall; D. H. Pegg, Orpington; R. C. Pepperell, Beckenham; A. P. Perrin, Barking; F. G. Pooley, Erith; H. G. Prangley, London; G. E. Ralph, St. Albans; R. W. Ramsay, London; J. Ridyard, Ashton-under-Lyne; V. G. Robinson, London.

R. B. Scoffham, Birmingham; K. W. Shaw, Sheffield; D. Smith, Burnley; R. W. F. Stoner, Brighton; J. R. Swanson, Liverpool; A. R. Thaira, Gillingham; R. G. Thompson, London; W. Thompson, Cambridge; G. J. Turner, Romford; M. A. C. Turner, Greenford; P. W. Turner, Birmingham; G. H. Tustain, Birmingham.

J. P. Wheeler, Syston; R. G. I. White, Annfield Plain; A. C. Williams, Hounslow; H. J. M. Worsley, London.

ASSOCIATE DIPLOMA

S. W. Ashley, Burton-upon-Trent; L. Brooker, Harrow; R. Collin, Wirral; J. A. Corns, Prescot; W. K. Fussell, Reading; R. A. Holmes, Rickmansworth; P. Ibbotson, Wombwell; E. F. Inggall, London; G. H. Perceval, Kenton; B. S. Scott, Sunderland.

ROOFING CONTRACTORS' ANNUAL BANQUET

BUILDERS were glad the Minister of Works realised that the building industry cannot do its job if it is "messed about or the victim of weather-cock planning." This view was expressed by MR. STEPHEN HUDSON, president of the National Federation of Building Trades Employers, at the annual banquet of the National Federation of Roofing Contractors, which took place at Grosvenor House, Park-lane, on November 21.

Mr. Hudson went on to say that the industry required a firm, long-term programme on which it could rely. He referred also to Mr. Eccles' mention of courage as well as confidence and assured the gathering that the industry would not lack this courage provided they were given confidence. As far as he knew, the fewer controls imposed the greater the confidence and this would result in encouraging the manufacture of more materials, which would, in turn, lead to the training of more apprentices.

MR. H. MOLSON, M.P., Parliamentary Secretary to the Minister of Works, responded to the toast of the Building Industry. He said that an effort applied by operatives, builders, architects and materials manufacturers, together with the Ministry, should see them through the great problem that lay before them. The starting-date of proposed new buildings had, in some cases, been postponed because the industry was inundated with demands. He knew that builders would respond more if they were provided with a "continuity" programme.

The President of the National Federation of Roofing Contractors, MR. G. ATKINSON, in reply to the toast of the Federation given by Mr. D. H. Green, O.B.E., president of the Federation of Associations of Specialists and Sub-Contractors, said they particularly welcomed the presence of Sir Luke Fawcett because harmonious relationship between employers and operatives was vital.

Mr. H. Payne, J.P., vice-president, N.F.R.C., presented Mr. Atkinson with a watch to commemorate his term of office. Other guests included Sir Harold and Lady Emmerson, Sir Nicholas de Villiers, K.B.E., and Mr. S. F. S. Hearder, Director, N.F.B.T.E.

KENT'S NEW SCHOOLS

Nearly 100 Built or Building

EIGHTY-EIGHT NEW SCHOOLS have been opened, or are at present being built, in Kent since the war. The figure is likely to reach a century by the end of the year.

These schools have been provided to accommodate the rising school population and to cater for children on new housing estates where no educational service previously existed. Kent's school population, which is at present at the record figure of 200,000, will rise by a further 9,000 next year when the boys and girls born just after the war start going to school.

The county architect is Mr. S. H. Loweth, F.S.A., F.R.I.B.A.

IN PARLIAMENT

Housing Policy

IN the House of Commons on Tuesday (November 27), in reply to questions by Mr. Charles Ian Orr-Ewing, Mr. Alport, Mr. Blenkinsop, Mr. Greville Howard, Mr. Harmar Nicholls and Mr. Basil Nield.

MR. HAROLD MACMILLAN, Minister of Housing and Local Government, made a statement. He said:

Local authorities are being given discretion to issue licences for the building of houses by private enterprise up to a maximum of one-half—instead of one-fifth—of their 1952 allocation. These houses will be for sale or letting to families on their waiting lists or to other applicants in equally urgent need of a home. The houses to be built under licence will be controlled as to maximum size and sale or resale price and rent.

The sale of municipal houses is being permitted, subject to suitable safeguards.

For their own 1952 programmes, local authorities are being encouraged to follow specimen designs of houses prepared in the Ministry to existing Dudley standards of room sizes and living space but of smaller superficial areas. Guidance on these matters is being posted to local authorities to-day.

Answering a question by Major Lloyd, MR. MACMILLAN said that the Secretary of State for Scotland would be making a statement applying the policy to the somewhat different conditions in Scotland.

Replying to Mr. Paget, MR. MACMILLAN said that each applicant would have to satisfy the local authority that he was in urgent need of a home: "That is the first pillar on which this stands."

Second, he continued, the size and type of the house would depend on the size and composition of the family, subject to the maximum size of 1,500 sq. ft. Third, the maximum sale price would be what the local authority considers a fair price for the completed house. "The houses will be planned to allow for more expensive substitutes for scarce materials to be used because I want to encourage the use of some of these substitutes in order to reduce the drain on materials available to local governments for other building plans." They would not be subsidised.

In reply to Mr. Alport, who asked when the allocations to local authorities for next year would be announced, the Minister said he wanted to make rapid progress but these allocations were not a final decision; they would be progressive and continuous. The purpose of the policy was to increase the number of houses for letting and for sale. "We shall at all stages still use the Dudley standard but shall make a smaller use of materials," he added. In doing this we have the hope and the determination of increasing the total number of houses built.

MR. BLENKINSOP asked what additional subsidies would be made available to housing authorities to meet the recent increase in loan charges.

MR. MACMILLAN said that question would be considered as part of the review of subsidy now taking place.

In reply to Mr. Jay, MR. MACMILLAN said: "I must clear up a misapprehension which perhaps does exist in the mind of the hon. member. I have raised the maximum ratio. It is left absolutely to a local authority to say whether, in its view, it shall allow any private building or 50 per cent. In some cases it will be one in four, in some one in three, or one in two, or one in ten, or none at all. What I want to do is to give flexibility of decision to the local authorities."

Rents of Council Houses

On November 23, during the second reading debate on the Public Works Loans Bill, the question of increased rents for council houses was raised by Labour members. The Bill provides the Public Works Loans Board with the money necessary to meet the requirements of local authorities, and authorises the Board to make certain commitments with respect to future loans. The Government had put the interest rates at which local authorities could borrow from the Board at substantially the same rate as the Government could borrow. It was explained that to charge local authorities at any rate lower than that at which the Government could themselves borrow introduced an element of subsidy.

MR. JAY, from the Opposition Front Bench, complained that the rise in borrowing rates was equivalent to a rise of 4s. or 5s. a week in the rent of new council houses for 60 years. For London County Council housing it worked out at increases ranging from 4s. 4d. to 6s. There was no certainty that the increase would be confined to new council houses. This would mean a cut in the social services and a rise in the cost of living. Thus the Government's policy would be a complete breach of the Conservative Party's election promises. He asked for an assurance that there would be no increase in council house rents.

SIR ARTHUR SALTER, the Minister of State for Economic Affairs, said that the increase in the interest rates would be one factor in the discussions with local authorities. It would be premature for him to attempt an assurance, and premature to make inferences of the kind made by the Opposition.

REMEMBER

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MR. JAY: The answer to my question, rather more briefly, is "No"?

SIR ARTHUR SALTER said that Mr. Jay was asking for assurances in a form that he knew was impossible, either in regard to council house rents or the precise specification of housing designs. The assurances could be asked for when a different Bill was under consideration. What had been destroying the value of the social services had been a financial condition expressed in the constant rise in prices. When the Government came into office they found the superstructure of expenditure, governmental and local authority, too heavy for the financial foundations. They had to strengthen the foundations. The Bill was a part of that general policy. Postponing the starting date of new schemes would have the effect of relieving a large overloading. There would have to be great and grave economies in public expenditure by both central and local government.

MR. EDE (the former Home Secretary) warned the Government that the Opposition would watch carefully the future development of a policy which had been so bluntly and brutally put by the Minister of State.

The Bill was read a second time.

Houses Licensed

On November 20, MR. HALE asked the Minister of Housing and Local Government how many houses would be licensed for completion by public authorities in England and Wales for the period January 1 to December 31, 1952.

MR. MACMILLAN said he did not altogether understand the phrase "licensed for completion." A licence was a permission to start, and was not a term applicable to houses built by local authorities. Allocations to local authorities were related to local needs and to progress made in each case.

Bomb-Damaged Cities

On November 20, MR. J. J. ASTOR asked the Minister of Housing and Local Government how soon he would be able to inform the war-damaged cities the amount of money they would be permitted to spend in reconstruction in 1952.

MR. MACMILLAN said he regretted that he could not yet say what allocation for non-housing reconstruction could be granted to these cities. He would do his best having regard to all other needs.

Rating of Site Values

On November 20, in reply to Mr. Gibson, MR. MACMILLAN said that the Secretary of State for Scotland and he had just received the report of the Committee on the Rating of Site Values, and they were arranging for it to be published.

Local Authority Boundaries

On November 20, MR. SWINGLER asked the Minister of Housing and Local Government whether he would bring forward legislation to redistribute the functions and alter the boundaries between local authorities.

MR. MACMILLAN said that this matter would receive the Government's attention.

Selling Price of Houses

On November 20, LIEUT.-COL. LIPTON asked the Minister of Housing and Local Government whether he would introduce a scheme to control the selling price of houses built before 1939.

MR. MACMILLAN said that the previous

Government announced that they found legislation on this subject impracticable. He did not dissent from that view.

Interest Rates

On November 20, MR. A. E. DAVIES asked the Minister of Housing and Local Government whether, in the forthcoming review of housing finance with the local authorities, he would also review the Acquisition of Small Dwellings Act, and the effect of the increased Bank Rate upon that scheme.

MR. MACMILLAN said that the forthcoming review was a review under the provisions of Section 16 of the Housing (Financial and Miscellaneous Provisions) Act, 1946. It did not extend to the rate of interest on advances under the Small Dwellings Acquisition Acts. These advances, of course, had never involved any question of direct subsidy.

Rent Restriction Acts

On November 22, MR. LEWIS asked the Minister of Housing and Local Government when the Government intended to introduce legislation to amend the Rent Restriction Acts.

MR. MACMILLAN said that the Government would consider the matter in due course.

Softwood Imports

On November 22, in reply to Mr. Nabarro, MR. HOPKINSON, Secretary for Overseas Trade, said that softwood imports for the first ten months of 1950 and 1951 were 742,000 and 1,443,000 standards, respectively. Total consumption in the same periods was 880,000 and 981,000 standards. It was intended to maintain softwood consumption at its present level in 1952.

Festival Finance

On November 22, MR. JOHN MORRISON asked the Minister of Works what was the total loss on the Festival of Britain to the nearest convenient date.

MR. ECCLES said while it was impossible to arrive at final figures for financial outturn of the Festival of Britain until the dismantling of the South Bank and other exhibitions had been completed and outstanding claims on contracts had been settled, he was in a position to give the House a preliminary and provisional appreciation.

The total *net* expenditure authorised for the Festival of Britain by the previous Government was £9 million, or £8,940,000 after deducting the £60,000 which the Festival Office provided as a net contribution to the cost of the Festival Pleasure Gardens, which were now being continued so that their eventual financial results could not yet be judged. While it was impracticable to be quite definite at this stage, the Festival Office hoped to succeed in keeping within its estimate in spite of steeply rising costs at the time the exhibitions and other events were being prepared and held.

The total gross authorised expenditure of £11,500,000 was divided as follows:—

	£
Festival Office	10,051,350
Ministry of Transport	709,000
Council of Industrial Design (Board of Trade)	318,000
Arts Council (Treasury)	400,000
British Film Institute (Treasury)...	15,500
National Museum of Wales (Treasury)	6,150
	£11,500,000

Against its gross expenditure of £10,051,350 the total revenue from all sources to be received by the Festival Office was now estimated at about £2,500,000, which compared with estimates before the opening of £2,560,000. This figure did not take account of scientific and artistic exhibits, purchased for the Festival exhibitions at a cost of some £200,000, which it was proposed to ask the House to approve as gifts to appropriate public institutions in the United Kingdom and the Commonwealth. While allowance had been made for the salvage value of the buildings, no account had been taken in this estimate of the additional revenue which would be received from the sale of exhibits or other useful articles used in the exhibitions.

Brick Supplies

On November 20, MR. R. ADAMS asked the Minister of Works if he would state the number of bricks required to build 200,000 and 300,000 houses, respectively, of the same size and design.

MR. ECCLES said he could not estimate the number of bricks required without details of the size and design of the house which the hon. member had in mind.

In reply to Mr. R. Adams, MR. ECCLES said he regretted that statistics were not kept of the consumption of bricks in particular classes of building work. The total production and consumption of bricks for all purposes was likely to be about 6,000 million in 1951. He was discussing with the industry the prospects for expanded production during 1952.

BOOKS RECEIVED

TIMBER BUILDING IN ENGLAND. By F. H. Crossley. (London: B. T. Batsford, Ltd.) Price 30s.

HILL'S COMPLETE LAW OF HOUSING. Second Cumulative Supplement. By D. P. Kerrigan and R. G. C. Davison. (London: Butterworth and Co. (Publishers), Ltd.) Price 30s. 8d., post free.

PLASTICS PROGRESS. Edited by Phillip Morgan, M.A. (London: Iliffe and Sons, Ltd.) Price 50s. Postage 1s. 3d.

*** *Books reviewed in these columns may be obtained on application to the Publisher, "The Builder," 4, Catherine-street, Aldwych, W.C.2. Cash (which should include 6d. to cover postage and packing) should accompany the order.*

STEEL ECONOMY IN TALL BUILDINGS

The Design of Rigid Frames

THE economy in steel that might be achieved by the use of multi-storey rigid steel frames has not hitherto been attained, largely owing to the lack of a design method that is simple and reasonably accurate.

National Building Studies Research Paper No. 10, "An Economical Design of Rigid Steel Frames for Multi-Storey Buildings," (Stationery office, 3s. 6d.), describes a method that is simple and rapid and sufficiently accurate to avoid overstressing without losing the economic advantages of the rigid frame over the pin-jointed frame.

The simplicity of the method is achieved by selecting, after analysis of a large number of frames, the variables that are of major importance. The effects of these variables are embodied in a series of substitute frames that take the place of the real frames. An analysis of the substitute frames is provided in the form of a series of design charts. From these the designer can obtain the moments graphically, without solving any equations.

The report includes worked examples and describes a new method of dealing with wind loads.

MINISTERS AT OLYMPIA

Architects' Help Sought in Housing Drive

MR. ERNEST MARPLES, M.P. (Parliamentary Secretary, Ministry of Housing and Local Government), and Mr. Hugh Molson (Parliamentary Secretary, Ministry of Works) attended on November 21 a luncheon (given by Mr. and Mrs. Hugh Montgomery) which followed the annual meeting of the Architects' Benevolent Society. Mr. Graham Henderson presided.

MR. MARPLES said that in the near future the architectural profession would be called upon to help in the building drive in producing simpler techniques and simpler planning. Housing was only one-fifth of the building programme and the other four-fifths would have to be squeezed to increase the output of houses.

In the near future an approach would be made to the R.I.B.A. to assist in the great housing drive; they would be asked to give generously and he was sure they would not be asked in vain.

MR. HUGH MOLSON said that it was the intention of his Ministry to produce the materials required. They could only make conditions favourable for the building industry; the success would depend upon simplification of standards, greater economy and increased production, and in those directions the architects had much to do.

His Ministry owed much to the Montgomery family for initiating the Building Exhibition which had done so much for the industry during its long life.

MR. HUGH MONTGOMERY briefly returned thanks.

MR. GOODHART-RENDEL (who described himself as "a licensed beggar") appealed to architects to support the Society in their intention at all costs not to reduce the grants made to their dependants. If the details of the cases helped could be published, he felt sure that many who did not realise the extent of the help needed would at once come forward. The Society needed to double its subscription lists.

NEWS IN BRIEF

N.F.B.T.E. Presidential Nominations

Mr. J. Ian Robertson, of Burton-on-Trent, has been nominated by the council of the National Federation of Building Trades Employers as President for 1952. Other nominations by the council are: Senior vice-president, Mr. Wilfred Horsfall (Liversedge, Yorks); junior vice-presidents, Messrs. H. G. Frost (Bury St. Edmunds), E. W. Garrett (London), and G. W. Grosvenor (Bath).

Building Centre's New Address

On and after Monday next, December 3, the address of The Building Centre will be Store-street, Tottenham Court-road, London, W.C.1. (Tel.: Museum 5400—ten lines.)

Stonework at Homestead Court

With reference to the article on Homestead Court Flats, Welwyn Garden City, which appeared in our issue of November 16, we are informed that the reconstructed stonework was by Kendell's Stone and Paving Co., Ltd.

Etonians at Building Exhibition

A party of boys from Eton College Scientific Society visited the Building Exhibition on Saturday, November 23, as guests of Mr. D. E. Woodbine Parish. Mr. Parish, himself an Etonian, recently spoke to the Society on "Building as a Career."

Annual Awards

The Plasterers National Joint Advisory Committee have made the annual awards of the Crombie Trophy and Tyzack Trowels. The Crombie Trophy has been awarded to the Willesden Technical College; Tyzack Trowels:—Silver Trowel, to Donald William Collins, Willesden Technical College; and Stainless Steel Trowel to Stanley Douglas, Leeds College of Technology.

Death of Mr. F. M. Parker

The death has occurred of Mr. Frederick Michael Parker, founder and chairman of the firm of Frederick Parker, Ltd., of Leicester. Started 39 years ago as a small business under a railway arch, Mr. Parker saw the firm grow from humble beginnings to its present size, when it employs more than 700.

Coming-of-Age Celebration

Mr. W. E. Rice, C.B.E., J.P., F.I.O.B., who for some years has been the able chairman of the Hotel and Catering Trades Employment Exchange Advisory Committee of the Ministry of Labour and National Service, held a reception at the Savoy Hotel on Tuesday, November 27, to mark the Committee's 21st year of service. Sir Walter Monckton, Minister of Labour and National Service, was unable to be present but was represented by Lady Monckton.

Dry Rot Touring Exhibition

The visits of this exhibition to Kingston, Croydon and Rochester, which were postponed in order to free the halls concerned for General Election purposes, have now been arranged for the following dates: December 7 to 15, at Guild Hall, Kingston; January 16 to 24, at Council Chambers, Croydon; and January 30 to February 7, at Corn Exchange, Rochester. It is hoped to arrange for the exhibition to be opened in London at the close of its tour.

FIBRE BUILDING BOARD

W.I.D.M.A.'s Appeal to Trade

THE Wallboard Importers', Distributors' and Merchants' Association has informed its members of the effect of the Government's decision to revoke, as from November 8, all existing open general licences in respect of imports of fibre building board.

In view of the curtailment of the volume of imports which will result, the association has had an interview with the Ministry of Materials concerning the effect of the new import licensing restrictions. It is hoped that the association will soon be in full possession of the details of the Government's policy regarding import licences, quotas and restriction of sales.

Members of W.I.D.M.A. have been informed that the Ministry desire the co-operation of all sections of the fibre building board trade to ensure that the essential needs of priority users will be met. Negotiations with the Minister are still proceeding, and further communications to the trade will be issued as and when necessary. Failure on the part of the trade to impose upon themselves voluntarily the disposal of their stocks in accordance with the priorities indicated will mean that there will be no alternative but to institute a consumption licence system, states the association.

If the trade is to retain its freedom from control, distributors should undertake to comply with the Ministry's request.

INQUIRY BUREAU

Porosity of Water Waste Preventers

Q.—I shall be pleased if any of your readers can suggest any suitable method of overcoming the porosity of white earthenware water waste preventers. Many of these fittings have been fitted by my company, a great number of which have had to be replaced due to the water penetrating the shell after 10-15 years. H. J. A.

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Prepared by:

The National Federation of Building Trades Employers

London, W.1

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Published by:

The Builder Ltd., Builder House, Catherine St., Aldwych, W.C.2

TEMPLE BAR 6251 (6 lines)

OFFICIAL NOTIFICATION

Softwood Imports

DISCUSSIONS are now being held with the Timber Trade Federation about the arrangements to be made for returning to private trade the import of softwood from North America and Eastern Europe and for ensuring the global limitation of softwood purchases already announced by the Government.

Pending the conclusion of these discussions and an announcement of detailed plans for softwood imports in 1952, which will be made as soon as possible, it has been decided to put into operation the following measures which are designed to avoid prejudicing such arrangements as may be made for 1952 softwood imports. This decision has been reached after consultation with representatives of the T.T.F., who are satisfied that it will have no adverse effect upon timber supplies generally, particularly as at this season of the year stocks are ample. Accordingly:—

(1) Softwood open individual import licences will be revoked with effect from November 27, 1951;
(2) Goods (other than those already en route before November 27) arriving on and after that day will require an import licence;
(3) Goods en route before November 27 will be admitted without import licence. Application for import licences for goods arriving on or before December 31, 1951, should be made on the usual Form ILB/A and sent in the first place to Timber Control, Lacon House, Theobalds-road, London, W.C.1. These licences will be freely granted.
(4) Importers are warned that no undertaking can be given that licences will be forthcoming to cover arrivals after December 31, whether under contracts already made or to be made.

APPRENTICE MASTER SCHEME

Regret at Threatened Closing

THE THREATENED ENDING in the early spring of next year of the Government's Apprentice Master Scheme for young builders is exercising the attention of Liverpool builders who are hoping the scheme may still be continued.

The last of 470 boys trained since 1947 by three Merseyside firms are now working on a site in Everton.

Mr. Ernest Tyson, whose firm supervised the boys' training at Speke, says the scheme has been most successful on Merseyside and has been responsible for boys entering the industry who would not otherwise have been recruited. There was a definite shortage of newcomers, especially in the trowel trade, he said.

Ald. W. T. Lancashire, ex-Lord Mayor and president of the Liverpool Regional Federation of Building Trades Employers, describes the scheme as the finest ever invented for the industry.

Apprentices from Approved School

Some time ago the London Regional Joint Apprenticeship Committee, in conjunction with the National Board, approved the facilities for instruction in building crafts at the Ardale Approved School at Stifford, near Grays, Essex, and agreed that the period spent by boys at this school should be accepted as part of the apprenticeship when they entered the building industry as prospective apprentices. The Joint Apprenticeship Committee and the L.M.B.A. have now assured the headmaster that they will endeavour to assist him in placing his boys with suitable firms, and any subscriber to the L.M.B.A. willing to accept boys from this school is asked to submit his name and address to the Association as soon as possible so that a register may be formed.

TRADE NEWS

Vertical Shuttering

The adaptability of Kwikform vertical shuttering, designed for double- or single-faced work, columns, beams or battened retaining walls, is illustrated in a brochure which has been recently published by Kwikform, Ltd., 194, Waterloo-road, Birmingham, 25.

Enterprise in Aluminium

To commemorate the termination of the Festival of Britain, Almin, Ltd., of Farnham Royal, Bucks, have issued a souvenir brochure devoted to the Dome of Discovery. This is the largest dome in the world and its roof is by far the largest single structure to be built of aluminium. Detailed pictures taken during the construction and a cross-section of the building are contained in this brochure.

Homestead Court Flats

Permanent waterproofing of the oversite concrete on the Hotel Block (E) and Staff Quarters Block (F) at the Homestead Court Flats, Welwyn Garden City (illustrated in our issue of November 16) was carried out by the R.I.W. Protective Products Co., Ltd., acting as sub-contractors to Welwyn Builders, Ltd. The material specified was R.I.W. marine cement liquid asphaltic composition employed in accordance with the usual "sandwich" concrete raft construction principle.

Film on Cornish Granite

Cornish Granite Films, Ltd., recently gave a preview of their film of the Cornish granite industry. The film is designed to further the use of granite in present-day construction, and shows the various ways in which granite can be applied. It also gives a simple account of the processes involved in the production of granite for the uses to which it is put in building and engineering construction. The film commences with shots of Launceston church, which show granite as a major building material over 800 years ago, and goes on to follow the erection of the new river wall on the south bank of the Thames. Over 3,500 tons of Cornish granite were used in the wall, all of which was dressed in Cornwall by Cornish masons. The film also shows the use of granite as a facing material for buildings of all types and sizes, and stresses the varied types of finish, ranging from the rock-faced surface to the finished slab with a high-gloss finish.

APPRENTICES RECEIVE ESSAY AWARDS

Ceremony at Building Exhibition

MR. DUDLEY F. COX, president of the London Master Builders' Association, distributed prizes in the Association's Club at Olympia to four building apprentices who took part in an essay competition organised by the *Illustrated Carpenter and Builder*. Subject of the essay was "The Building Industry and I."

The ceremony was presided over by Mr. Arthur Tapping, chairman of the board of the newspaper. Prizes of £10 each went to:—D. Martin (19), R. W. Martin (18), Thomas Cook (17) and David Dodd (17). Thomas Cook travelled from his home at Stornoway, Isle of Lewis, in order to be present at the prizegiving.

NEW COMPANIES

THE FOLLOWING NEW COMPANIES, registered in England, have been announced by Jordan and Sons, Ltd., company registration agents.

Temple Vermiculite Specialists, Ltd. (500323). Regd. Oct. 12, Hill Heads-rd., Whitley Bay, bldrs. and contractors, etc. Nom. cap.: £1,000. Dir.: A. E. Temple, 15, Sunlea-ave., Cullercoats, Northumberland.

Chadwick and Son (Sheffield), Ltd. (500336). Regd. Oct. 13, Victoria-st., Sheffield, 3, bldg. contractors, etc. Nom. cap.: £15,000. Dir.: Mrs. M. Chadwick, 210, Carterknowle-rd., Sheffield, 7.

James Hartley and Son, Ltd. (500382). Regd. Oct. 15, Cobden-st., Chadderton, Lancs, bldr. and contractor. Nom. cap.: £15,000. Dir.: J. Hartley, 64, Butterworth-la., Chadderton.

L. P. Brown and Sons, Ltd. (500411). Regd. Oct. 16, 61, Spencer-ave., Earlsdon, Coventry, bldrs. and decorators. Nom. cap.: £1,000. Dir.: L. P. Brown.

Paterson (Bond Street), Ltd. (500493). Regd. Oct. 18, bldrs., etc. Nom. cap.: £1,000. Dir.: J. Paterson, 5, Canning-pl., W.8.

J. F. Booth and Son, Ltd. (500559). Regd. Oct. 20, North Bar, Banbury, Oxon, bldrs. and contractors. Nom. cap.: £60,000. Dir.: H. E. Booth, The Brook, St. John's, Warwick.

Percy W. Jaggard, Ltd. (500667). Regd. Oct. 24, Cow-la., High-st., Bushey, Herts, bldr. and contractor. Nom. cap.: £2,000. Dir.: P. W. Jaggard, 26, Hillside-rd., Bushey.

G. E. Dodd & Son (Builders), Ltd. (500552). Regd. Oct. 20, 1, Devonshire-rd., Birkenhead, genl. bldr. and contractor. Nom. cap. £3,000. Dir.: T. E. Dodd.

Harding and Williamson, Ltd. (500555). Regd. Oct. 20, Hall-st., North Finchley, bldrs. and bldg. contractors, etc. Nom. cap.: £100. Dir.: D. G. Harding, 45, Churchfield-ave., North Finchley, N.12.

H. R. Walker (London), Ltd. (500557). Regd. Oct. 20, 38a, King's-rd., Chelsea, S.W.3, bldrs., contractors, etc. Nom. cap.: £500. Dir.: H. R. Walker, 285, New King's-rd., Chelsea, S.W.6.

Henry Ormson & Co., Ltd. (500631). Regd. Oct. 23, Stamford-rd., Bowdon, Ches., bldrs. and contractors, etc. Nom. cap.: £7,000. Dir.: T. H. Ormson, Kirklington, Stamford-rd., Bowdon, Ches.

F. Cook, Ltd. (500653). Regd. Oct. 24, 337, Cheriton-rd., Folkestone, Kent, bldrs., decorators, joiners, etc. Nom. cap.: £1,000. Dir.: J. P. Cook, Green Haven, Brook Close, Ruislip.

John Holland & Son (Dudley), Ltd. (500730). Regd. Oct. 26, Brooke-st., Dudley, bldrs., bldg. contractors, etc. Nom. cap.: £3,000. Dir.: G. E. Holland, Dudley.

Colets (Contractors), Ltd. (500761). Regd. Oct. 27, 22, Balmoral-rd., Worcester Park, Surrey, bldrs. and contractors, etc. Nom. cap.: £500. Dir.: T. S. Cole.

W. E. and A. Tucker Bros., Ltd. (500820). Regd. Oct. 29, Tregare-st., Newport, Mon., bldrs., etc. Nom. cap.: £100. Dir.: W. F. Tucker, 221, Bassaleg-rd., Newport, Mon.

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BRITISH STANDARDS

Metal Scaffolding, Sheet Metal for Gas-Fired Appliances

THE British Standards Institution has issued the following British Standards: B.S. 1139: 1951, "Metal Scaffolding" (price 5s.). This revised edition supersedes the war emergency issue of this standard "Tubular Steel Scaffolding," published in 1943, and the specification now includes both steel and aluminium alloy tubes and fittings, the range of fittings having been considerably extended. Prefabricated components, of which the principal members are made of steel, such as trestles, tripods, and frames and suspended scaffolding, are now included in the scope of the standard.

The tubes, fittings and prefabricated components referred to in the standard are for usage and loading conditions customary in normal building construction, and the specification does not cover scaffolding intended for use in special conditions or for abnormal or concentrated loads, although the standard fittings may sometimes be used in the erection of such scaffolding.

Drawings are given illustrating the positions in which the various types of coupling and other fittings are generally used. These drawings are diagrammatic and are not intended to show the design of the scaffolding.

The standard is divided into seven sections dealing with definitions, steel tubing, steel fittings for tubular scaffolding, aluminium alloy tubing, aluminium alloy fittings, steel trestle scaffolds, and suspended steel scaffolding respectively.

"Sheet Metal Cylindrical Flue Pipes, Fittings and Accessories for Gas-Fired Appliances" is the subject of B.S. 715: 1951. The specification, which has been brought up to date in the light of extensive experience of the use of the 1936 edition, applies to pipes and fittings having welded or folded seams and finished after fabrication by vitreous enamelling, electro-deposition, galvanising, galvanising and painting, or any other suitable corrosion-resisting and heat-resisting finishes.

It includes tables of dimensions of various pipes, bends, joints and connecting pieces, and appendices on test for quality of painted coatings, method of cutting vitreous-enamelled flue pipe, and typical methods of assembly. The price of the standard is 4s.

Copies of these standards may be obtained from the British Standards Institution, Sales Department, 24, Victoria-street, S.W.1.

CODES OF PRACTICE

Portable Fire Extinguishers

THE Council for Codes of Practice for Buildings has now issued in final form Code 402.401, "Portable Fire Extinguishers." It was drawn up by a committee convened on behalf of the council by the Institution of Mechanical Engineers, and the present code is a revision of the draft previously issued for comment.

This code makes recommendations on the design, installation, testing, inspection and maintenance of portable fire-fighting appliances for general use in buildings. The appliances dealt with are portable extinguishers, fire buckets and portable pumps, such as can be readily carried by one person.

The code carries the usual warning that, in the present abnormal conditions, it may not be practicable to carry out all the recommendations. Copies may be obtained from the British Standards Institution, 24-28, Victoria-street, London, S.W.1, price 2s. post free, reference CP 402.401 (1951).

THE SCOTTISH BUILDER

Building Crafts Training

SPEAKING on building education in Scotland to a representative gathering of Scottish builders, further education representatives, and building teachers at the Edinburgh School of Building on November 17, COUNCILLOR H. A. BRECHIN, F.R.I.C.S., convenor of Edinburgh Further Education Committee, reviewed the history of Scottish building crafts training and general building education.

The substantial increase in recent years in the numbers of full-time and part-time day students in building courses was largely due to the active work and co-operation of the Further Education Committees and the Joint Apprenticeship and Training Committees of the industry in the various districts, he said.

It was felt that a wider recognition of the value to the industry of this development should be accorded by Scottish builders. The need for junior technical colleges, training in the administrative work of the industry, and revision of apprenticeship training periods were also stressed.

The meeting was the second in the series under the organisation of the Scottish Association for Building Education. The first meeting took place at the Scottish Building Centre, Glasgow, where Mr. MacDonald, the Ministry of Works, and Mr. H. J. Eldridge, of the Building Research Station, lectured on common defects in buildings.

NEW BUILDINGS

Dunbarton.—C.C. propose construction of three standard police sub-stations at Clydebank and Alexandria.

Dundee.—Plans for a new radiodiagnostic dept. at the Royal Infirmary have been prepared by Johnston & Baxter, L./A.R.I.B.A., 49, Meadowside, Dundee, under the general direction of James Deuchars, A.R.I.B.A., Regional Architect, and not as stated in our issue of November 16.

Edinburgh.—T.C. to erect 59 traditional-type houses at Drylaw Mains Housing Development site. Plans by City Architect, A. G. Forgie, A.R.I.B.A., City-chbrs.

Edinburgh.—Corporation to install central heating, hot-water systems and ventilation system at Inch Primary School. Plans by A. G. Forgie, A.R.I.B.A., City Architect.

Edinburgh.—Site preparation work has been approved for the Clermiston North area. City Architect is in charge of the development.

Fife.—C.C. is to proceed with road construction at the Glenrothes area, from Preston School to the new town centre.

Glenrothes.—Corporation seek permission from Department of Health for Scotland to erect a terrace of six prototype low-cost houses designed by Peter Tinto, Corporation's Chief Architect and Planning Officer.

Glenrothes.—Corporation have approved plans of T-shaped blocks of three-storeyed houses to be erected at Auchmuty.

Kilmarnock.—Dean of Guild Court has granted warrant for proposed erection by Ayr C.C. of R.C. secondary school at Grassyards-rd. at an estimated cost of £167,529.

Kilmarnock.—Plans by Scottish Special Housing Association for erection of 38 non-traditional houses at Shortless at an estimated cost of £46,948 have been granted a warrant by Dean of Guild Court.

St. Andrews.—W. Alexander & Sons, Ltd., propose to erect a combined bus station and garage at Station-rd., for which T.C. planning permission has been granted.

Tobermory.—The Hydro-Electric Board are to construct a concrete weir and intake pipeline foundations, laying and jointing of steel piping, undertaking excavation work, machine foundations and outlet works. W. D. D. Fenton, North of Scotland Hydro-Electric Board, 16, Rothesay-ter., Edinburgh.

FUTURE CONSTRUCTION

PUBLIC APPOINTMENTS

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

DECEMBER 3.

†Birmingham T.C.—Two doctors' houses at Packington-ave. and Edgwood-rd. C.E. & S., Civic Centre. Dep. £2 2s.

†Cardiganshire C.C.—Proposed new primary school at Ponterwyd. G. R. Bruce (A.), County Hall, Aberayon. Dep. £2 2s.

DECEMBER 4.

†Sutton-in-Ashfield U.D.C.—Conversion of Leamington Hall into flats. Warner & Dean, Mansfield-rd. Dep. £2 2s. Tenders by December 19.

DECEMBER 5.

***†Deal B.C.**—20 houses at Godwyn-rd. B.E. Dep. £2 2s.

***†Somerset C.C.**—School, Coleridge Vale, Clevedon. R. O. Harris (F.), County A., Park-st., Taunton. Dep. £2 2s.

†Trent River Board.—Erection of five sluice gates. W. H. Haile, M.T.C.E., 206, Derby-rd., Nottingham. Dep. £5. Tenders by February 18.

DECEMBER 6.

Staffordshire C.C.—Alterations and extensions at Woodcross boys' and Dibdale children's homes. T. H. Evans, County-bldgs., Stafford.

DECEMBER 7.

***†Bromley B.C.**—186 houses, Hayes-pl. estate. B.E.

DECEMBER 8.

***†Whitstable U.D.C.**—Two pairs of houses, one block of 4 dwellings and 2 blocks and 1 pair of houses. F. Tomlinson, Clerk.

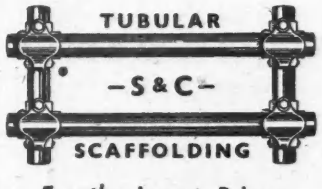
DECEMBER 10.

***†Aireborough U.D.C.**—14 houses, Farm View-gdns., and Sunnybank-cres., Yeadon. E. & S. Dep. £2 2s.

***Dover B.C.**—12 houses and 12 flats. B.E., Brookhse. Dep. £2 2s.

***†East Suffolk C.C.**—Science room, Eye County modern school and crafts room, Witnesham County modern school. E. J. Symcox (F.), County A., Ipswich. Dep. £2 2s. (each). Tenders by January 10.

Having Secured the Contract—what about the Steel Scaffolding?



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***†Hornsey B.C.**—Ten shops with 18 flats over, Block "K" site, Park-rd. B.E. & S. Tenders by January 14.

Macclesfield R.D.C.—12 houses at Sutton-la. Ends housing site. H. Chadwick, 19, King Edward-st. Dep. £2 2s.

***†Middlesbrough C.B.**—Primary school, Green-la., Linthorpe. Director of Education, Woodlands-rd. Dep. £5 5s.

***†Norman Cross R.D.C.**—24 houses and roads, etc., at St. Mary's-st., Farcet. Ruddle and Wilkinson, architects, Long Causeway-chbrs., Peterborough. Tenders by January 4.

***†Portsmouth T.C.**—Alterations and adaptations, St. Mary's House. A. G. Goodair (A.), Albemarle-hse., Osborne-rd., Southsea. Dep. £1 1s. Tenders by January 1.

***†Portsmouth T.C.**—11 shops, showrooms and maisonettes, Palmerston-rd., Southsea. City A., 1, Western-parade, Portsmouth.

DECEMBER 11.

Beeston and Stapleford R.D.C.—16 houses and 20 flats at Ryecroft housing estate. G. C. Hardy, M.B.E., A.R.I.C.S., Town Hall. Dep. £2 2s.

***†Salford T.C.**—Clarendon secondary modern school at Unwin-st. H. H. Tomson. Dep. £3 3s. Tenders by January 17.

DECEMBER 12.

Gwyfai R.D.C.—30 houses at Dernolen. J. Isgoed Williams, Penmaenmawr. Dep. £2.

Lincoln T.C.—Erection of Riseholme C. infants' school. A. Sutcliffe, 4, Lindum-rd.

DECEMBER 14.

***Durham C.C.**—Police house and office at Sacriston-la., Witton Gilbert. G. R. Clayton (F.), Court-la.

***East Ham C.B.**—Mortuary at High-st. South, and clinic extension at Church-rd., Manor Park, E.12. B.E. & S. Dep. £2 2s. (each).

Edeynion R.D.C.—Eight houses at Llandrillo. C., Council Offices, Corwen. Dep. £3.

***†Salop C.C.**—Modern school, Harlescott, and primary school, Whitchurch. C. H. Simmons, County Architect, Shrewsbury.

Whitefield U.D.C.—38 houses at Elms estate. S. & A., Town Hall. Dep. £2 2s.

DECEMBER 15.

***Durham T.C.**—50 houses at Framwellgate Moor. City E. Dep. £2 2s.

Mablethorpe and Sutton U.D.C.—34 houses at three sites. Watkins, Coombes & Partners, Heslam-chbrs., 191, High-st., Lincoln. Dep. £5.

DECEMBER 17.

***†Billericay U.D.C.**—Convenience, Wickford. S. Dep. £2 2s.

Bristol T.C.—Reconstruction of bridge over river Frome at Muller-rd., C.E., Arno's-court, 470, Bath-rd., Brislington, Bristol, 4. Dep. £2 2s.

Ceiriog R.D.C.—40 houses and 6 shops with flats at Rhosywaen. S., The Mount, Chirk. Dep. £5 5s.

***Dagenham B.C.**—Precast concrete framed, brick clad building, etc., depot, Frizlands-la. B.E. & S. Dep. £2 2s.

***Exmouth U.D.C.**—Alterations and additions and provision of new drain to refreshment kiosk, Orcombe Point. E. & S. Dep. £2 2s.

***Salford T.C.**—Convenience and sub-station, Cross-la. City E. Dep. £2 2s.

DECEMBER 18.

Poole T.C.—180 houses at various sites. B.E., Municipal-bldgs. Dep. £2 2s.

Sturminster R.D.C.—28 houses and 10 bungalows at various sites. R. A. Phillips & Partners, Bush-hse., 15, Christchurch-rd., Bournemouth. Dep £2 2s.

DECEMBER 19.

Northampton R.D.C.—50 houses and 8 flats and shops. R. J. Miller, Cheyne Walk. Dep. £3 3s.

DECEMBER 20.

***Bucks C.C.**—School at Langley. County A., Aylesbury. Dep. £5 5s. Tenders by January 31.

Devon C.C.—Erection of children's home at Paignton. H. V. de Courcy Hague (F.), 97, Hawtree-rd., Exeter. Dep. £3 3s.

***Shipston-on-Stour R.D.C.**—Four houses at Great Walford. E. H. Earp & Badger L./A.R.I.B.A., Scholars-la., Stratford-upon-Avon. Dep. £2 2s.

***Sunderland C.B.**—Erection of Pennywell West primary infants' school and kitchen dining-room. Boro' A., Grange-hse., Stockton-rd. Dep. £2 2s.

Wallingford B.C.—Four shops with living accommodation. L. T. Foster (A.), 72, Wantage-rd. Dep. £2 2s.

DECEMBER 21.

Bromyard U.D.C.—11 houses at Bannutt Tree Meadow housing estate. J. W. Greenwood, The Elms, Tedstone. Dep. £2.

Kirkburton U.D.C.—Six houses at Bedford-ave. D. J. D. Woodhall, Town Hall. Dep. £2 2s.

***Lincoln (Lindsey) C.C.**—Secondary modern school, Foxhills, Scunthorpe. A. R. Clark (A.), County A., Lincoln.

***West Riding Standing Joint Committee.**—35 police houses and seven offices on various sites. County A., "Bishopgarth," Westfield-rd., Wakefield. Dep. £2 2s.

DECEMBER 22.

Cardigan B.C.—22 houses at Ridgeway site. Howard Williams & Partners, Graystones, Priory-st. Dep. £3 3s.

DECEMBER 28.

Malton R.D.C.—Ten houses at Slingsby. Alan H. Greenhalgh, R.D.C. Offices, Welham-rd., Norton. Dep. £2 2s.

DECEMBER 30.

***Leeds T.C.**—Conveniences at junction of Middleton Park-rd. and Belle Isle-rd. R. A. H. Livett (A.), City A. Dep. £1 1s.

DECEMBER 31.

Alcester R.D.C.—34 houses at various sites. F. B. Andrews & Son, 95, Colmore-row, Birmingham. Dep. £2 2s.

JANUARY 1.

***Louth Boro'.**—32 houses, etc., Eastfield-rd. estate. T.C. Dep. £2 2s.

JANUARY 2.

***Cardiff T.C.**—Sec. mod. mixed school at Newport-rd., Rumney. City S. Dep. £2 2s.

JANUARY 4.

Workington B.C.—Erection of 72 houses at Northside. B.E. & S., "Stoneleigh," Park End-rd., Workington, Cumberland. Dep. £5 5s.

JANUARY 7.

Gipping R.D.C.—Eight houses at Ringshall. E. & S., Council Offices, Needham Market, nr. Ipswich. Dep. £3.

JANUARY 14.

***Erith B.C.**—40 flats and three aged persons' bungalows at Hurst-pl., Abbey Wood, S.E.2. B.E. & S. Dep. £2 2s.

***West Riding C.C.**—Schools at Whiston and Kirk Sandall. County A., Bishopgarth, Westfield-rd., Wakefield. Dep. £2 2s. (each).

NO DATE.

Bedale R.D.C.—12 houses at three sites. H. B. Richardson, 3, Skinnergate, Darlington. Dep. £2 2s.

Fleetwood T.C.—82 houses at West View estate. B.S., Town Hall. Dep. £3 3s.

Holland C.C.—Four police houses at Boston. County A., County Hall, Boston.

***Rickmansworth U.D.C.**—142 houses, Berry-la. estate. E. & S. Dep. £3 3s.

***Southgate B.C.**—Construction of concert pavilion. B.E. & S., Town Hall. Dep. £2 2s.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

DECEMBER 5.

Brierley Hill U.D.C.—Internal painting and decorating of council houses. J. H. Moore (A.), Council Offices, Moor-st. Dep. £2 2s.

***†Bristol T.C.**—Engineering services at Southmead primary "B" school. J. Meredith (F.), City A. Dep. £2 2s. Tenders by December 28.

DECEMBER 10.

***Plymouth T.C.**—Electrical installations, in first instalment, new technical college. H. J. W. Stirling (A.), Seymour-rd.

DECEMBER 14.

***Burnley C.B.**—Wiring installation of 28 flats and 24 houses at Brunshaw estate. B.E., 22-24, Nicholas-st. Dep. £1 1s.

DECEMBER 17.

***Wolverhampton C.B.**—30,000 yds. chestnut fencing and 8,000 5-ft. stakes. B.E.

DECEMBER 19.

Ealing B.C.—Installation of electrical work at Ealing Grammar School. B.E. & S., Town Hall. Dep. £2.

DECEMBER 21.

***Bexley B.C.**—Installation of domestic hot water systems in 304 houses at Pickford and Highland estates. B.E. & S. Dep. £2 2s.

DECEMBER 22.

Manchester T.C.—Supply, delivery and erection of heating, hot-water supply, steam and condense mains at Langho Colony, Langho, nr. Blackburn. City A., Town Hall. Dep. £1 1s.

DECEMBER 28.

Nairobi T.C.—Supply and delivery of cast or spun-iron pipes and special castings. C.E., Town Hall.

DECEMBER 29.

East Grinstead U.D.C.—Surveyor. (Materials.)

JANUARY 5.

East Suffolk C.C.—C.S. (Materials).

ROADS, SEWERAGE AND WATER WORKS

DECEMBER 8.

***Durham C.C.**—Levelling and drainage of playing field at Ryhope Robert Richardson Grammar school. G. R. Clayton (F.), County A., Durham.

DECEMBER 10.

Walsall C.B.—Roads and sewers on either or both of the Brockhurst-cres. site and the Lichfield-rd. and Field-rd. site. B.E. & S. Dep. £2 2s. for each tender.

DECEMBER 12.

Doncaster C.B.—Sewage and surface water drainage scheme. Water Engineer, 2, Priory-pl. Dep. £5 5s.

DECEMBER 14.

Malden and Coombe B.C.—Construction of part of Bodley-rd. B.E., Municipal Offices, New Malden, Surrey.

DECEMBER 15.

Aberdare U.D.C.—Extension of sewer. E. & S., Vestry Hall.

DECEMBER 17.

Cannock U.D.C.—Roads and sewer works at Hednesford. E. & S., Council-hse., The Green. Dep. £2 2s.

Doncaster C.B.—Reconstruction of Princes and Young streets. B.E., 2, Priory-pl. Dep. £3 3s.

Exeter T.C.—Construction of Service-rd. at Sidwell-st. area. City E. & S., 7, Sothernhay West. Dep. £2 2s.

***Newmarket R.D.C.**—Pumping stations, Chippenham and Chevely. H. W. Evans, clerk Dep. £5.

DECEMBER 18.

Carlisle T.C.—Construction of carriageway, etc., at Chertsey estate and London-rd. C.E., 18, Fisher-st.

Coventry T.C.—Completion of roads and footpaths at Allersley. C.E., Council-hse. Dep. £5.

Torquay B.C.—Roads and sewers at Sherwell Valley housing estate. B.E., Town Hall. Dep. £5 5s.

DECEMBER 20.

Battle R.D.C.—Construction of sewer and sewage works. John Taylor & Sons, Artillery-hse., Artillery-row, Westminster, S.W.1. Dep. £5.

Harrow U.D.C.—Laying of macadam and asphalt in various roads. E. & S., "Cottesmore," Uxbridge-rd., Stanmore, Middlesex. Dep. £2.

***Wycombe R.D.C.**—Extension of roadworks, sewerage and sewage works, Blind-la. estate, Bourne End. L. I. Cockerham (L.), Housing Architect & Surveyor, 100 Easton-st. Dep. £2 2s.

DECEMBER 21.

Warwick B.C.—Sewerage and sewage disposal works. E., 25, Temple-row, Birmingham, 2.

DECEMBER 29.

East Grinstead U.D.C.—Surface dressing. B. J. Cornelius, East Court.

DECEMBER 31.

St. Albans T.C.—Construction of sewer works at Park-st. C.E., 16, St. Peter's-st. Dep. £2 2s.

JANUARY 14.

Bridgwater R.D.C.—Sewerage and sewage disposal works at West Huntspill. Lemon & Blizard, 59, Tufton-st., Westminster, S.W.1. Dep. £3 3s.

East Kesteven R.D.C.—Trunk and distribution mains. George Dale, Council Offices, Northgate, Sleaford, Lincs. Dep. £5 5s.

NO DATE.

Darlaston U.D.C.—Construction of carriageways and sewers at Bentley housing estate. E. & S., Victoria Park Offices. Dep. £3 3s.

Lanark C.C.—Outfall sewer and sewage works. J. B. Murray, 23, Clydesdale-st., Hamilton.

Wallasey C.B.—Completion of roadworks at Moreton. B.E., Town Hall. Dep. £1 1s.

GENERAL BUILDING WORK

(LONDON)

City.—OFFICE BUILDING.—Sir Giles Gilbert Scott, F.R.I.B.A., 3, Field-ct., Gray's Inn, is the architect for proposed erection of office block at Guildhall Precincts.

Croydon.—FLATS.—The address of Riches & Blythin, F./A.R.I.B.A., as given in our issue of November 23 in connection with the erection of flats at Duppas-ave., Central-hill and Gatestone-rd. was incorrectly given. It should have read 16, Northumberland-ave., W.C.2.

Dagenham.—FACTORY.—Megan Units, Ltd., propose to build a factory at Hainault Industrial Estate. Plans by Westmore & Sanders, 121, Cheapside, E.C.2.

East Barnet.—MAISONETTES.—U.D.C. plan to build 20 maisonettes for old people at Churchmead-close at an estimated cost of £25,000. Plans by Council's Architects' Department.

Hornchurch.—MAISONETTES AND HOUSES.—Council's Architects' Department has prepared plans for erection of 64 maisonettes and four houses at Hacton Farm estate.

Ilford.—SHOPS AND FLATS.—A. J. Fowles, F.R.I.B.A., 7, Burlescombe-rd., Thorpe Bay, has prepared plans for erection of 14 shops and flats at Cranbrook-rd. B.C. to build block of flats at Gaysham Hall site.

Mitcham.—FLATS.—B.C. to build 117 flats at Glebe estate. Plans by Collcutt & Hamp, F./A.R.I.B.A., 126, Wigmore-st., W.1.

Upminster.—DWELLINGS.—W. D. Key, F.R.I.B.A., 3, Tindal-sq., Chelmsford, Essex, has prepared plans for erection of 20 houses at Ingrebourne-gdns. and Eversleigh-gdns.

Walthamstow.—HOUSES.—Boro' Architects' Department has prepared plans for proposed erection of six houses at Ritchings-ave., eight at St. John's-rd., and 24 at Bulls Farm, Billet-rd.

Walthamstow.—OLD PEOPLE'S DWELLINGS.—B.C. propose erection of 22 aged persons' dwellings at Bulls Farm, Billet-rd. Plans by Boro' Architects' Department.

Walthamstow.—FACTORY EXTENSION.—Douglas White & Furniss, A./A.R.I.B.A., 147, Cheapside, E.C.2, have prepared plans for extension to factory at Blackhorse-la. for Duroglass, Ltd.

Walthamstow.—APPOINTMENT.—B.C. Reconstruction and Housing Committee have appointed C. E. Ball & Partners quantity surveyors for proposed erection of five shops and maisonettes at Billet-rd. and Folly-la. estate; 10 flats at Boundary-rd. and St. Barnabas-rd.; and 24 flats at Hoe-st. and Grosvenor Park-rd.

Walthamstow.—BUNGALOWS.—F. G. Cox has been appointed quantity surveyor by B.C. Reconstruction and Housing Committee for erection of five bungalows at Roland-rd.

Willesden.—FACTORY BUILDINGS.—Bee Bee Biscuits, Ltd., Sunya House, Scrubs-la., N.W.10, propose erection of boiler houses and diesel generator building.

Woolwich.—DWELLINGS.—B.C. to build 66 dwellings at Rectory-pl. and 18 at St. Mary-st. Plans by Boro' Architects' Department

(PROVINCIAL)

Altrincham.—Manchester Regional Hospital Board approved extensions and improvements to radiology department at General Hospital.—Cheshire C.C. propose erection of ambulance depot at Weldon-rd. and Manchester-rd.

Ashby-de-la-Zouch.—Pick, Everard, Keay & Gimson, 5, Millstone-la., Leicester, are the architects for extensions to maternity unit at District Hospital.

Barrow-in-Furness.—B.C. approved layout plans for extension of Tummerhill site to provide 118 houses, 10 flats and 14 garages.

Bedale.—R.D.C. propose erection of four houses at Well and six at Little Crakehall. Architect is H. B. Richardson, 3, Skinnergate, Darlington.

Birkenhead.—Liverpool Regional Hospital Board propose new X-ray department at Children's Hospital, at est. cost of £14,050.

Birmingham.—E.C. propose reinstatement of Summer Hill Home, at est. cost of £54,800.

Birmingham.—T.C. propose completion of New St. Martin's toll market, underground car-park, etc., at Edgbaston, to cost £134,250.

Bolton.—B.C. seek loan of £40,776 for new nursery at Oakfall Chorley New-rd.—B.C. approved plans for extensions to St. Williams R.C. prim. sch. for R.C. Diocese of Salford.

Bootle.—T.C. have approved in principal a comprehensive plan for the development of the borough during the next 20 years, and are submitting it to the Ministry of Housing and Local Government.

Braintree.—R.D.C. to erect 18 houses at Finchingfield and 20 at Coggeshall.

Cheshire.—Liverpool Regional Hospital Board to negotiate with C.C. site for erection of new hospital.

Chesterfield.—Derbys C.C. to adapt "Belmont House" as a residential nursery.

Clayton-le-Moors.—U.D.C. to erect further 40 houses at Field Bottoms site.

Darwen.—T.C. to prepare plans for adaptation of chapel at cemetery as a crematorium, £8,000 (est.).

Derbys.—C.C. propose new fire station at Bradwell and improvements to Whaley Bridge fire station.

Doncaster.—Development at St. Catherine's Institution for Regional Hospital Board. Architects are Pite, Son & Fairweather, London.

Dover.—B.C. propose to erect 92 houses at Buckland Valley estate and 32 flats at Durham Hill.

Droitwich.—R.D.C. to prepare quantities, etc., for 10 houses at Chequers-la., Wychbold.

Dun Laoghaire.—Fullers (Ireland), Ltd., propose to erect seven flats, six shops, and restaurant at Neptune Hotel, Marine-rd.

Durham.—C.C. to build 10 police houses at Red

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OUR NEW SUPER-HARD FLOORING TILES NOW SPECIFIED BY LEADING ARCHITECTS

Hills estate, Durham City. County A. is G. R. Clayton, Court-la., Durham.

Erith.—B.C. to build 48 houses at Matfield-rd.

Essex.—C.C. Fire Service building programme for 1952-53 includes divisional headquarters at Hogg-la., Grays, to cost £45,000; retained fire station at Dunmow, to cost £6,000; and two-way retained fire station at Manningtree, to cost £6,000.

Gosport.—Hampshire County Architect, S. Low, A.R.I.B.A., has prepared plans for rebuilding police station, court house, offices, etc., at South-st.

Hebburn-on-Tyne.—U.D.C. plan erection of row of houses adjoining Argyle-st.; surveyor has prepared plans for 10 flats at Quarry-rd.; and additions are planned for the Pyrotenax Co., Ltd., Hedgeley. Plans by J. Raine, 8, Mosley-st., Newcastle-on-Tyne.

Hereford.—T.C. propose adaptation of chapel as a crematorium.

Houghton-le-Spring.—U.D.C. Surveyor, W. H. Smith, has been asked to include terrace houses in layout plans for future housing schemes.—The B.D. Case Co., Robinson-st., are seeking permission to erect new factory.

Jarrow.—T.C. has applied for loan sanction to borrow £34,024 for erection of 26 houses at South Leam-la., to plans by H. W. T. Perkins, Boro' E.

Kidderminster.—L. C. Lomas, County A., 14, Castle-st., Worcester, has prepared plans for divisional police station; police houses and other works at Blakebrook.

Limavady.—R.D.C. has decided to apply for additional loan of £275,000 to complete existing scheme of 300 houses.

Macclesfield.—C. H. Johnson (Machinery), Ltd., Stockport, propose new factory at Hurdsfield estate.

Manchester.—Regional Hospital Board approved adaptation of "A" and "B" blocks at Springfield Hospital, £122,600 (est.).

Middlesbrough.—Boro' E., J. A. Kenyon, has prepared sketch plans for shops at Berwick Hills housing site, for T.C.

Newcastle-on-Tyne.—City A., G. Kenyon, A.R.I.B.A., 18, Cloth-market, has prepared plans for erection of houses at Kenton.

Northants.—E.C's 1952-3 school building programme includes three form entry mixed grammar, Corby; sec. mod., Duston; sec. mod., Guisborough; enlargement of sec. mod., Towcester; and extensions to Wellingborough Technical Institute.

Nottingham.—M.O.E. approved 1952-3 programme:—Wollaton, Bramcote Drive Junior, £52,800 est.; Clifton estate inf. and jun., £37,000 and £50,000; Bestwood Grammar, Final Instalment), £100,000 est.; Bulwell Squires-ave. sec., £183,000; and Sneinton Boulevard boys' sec., £172,000 est.

Oldbury.—T.C. propose erection of Barlow Homes for aged persons at Pound-rd.

Oldham.—Cameron & Middleton, 32, Deansgate, Manchester 3, are the surveyors for proposed shops, maisonettes and garages at Limeside estate.

Oswaldtwistle.—New Paddock House R.C. Grammar sch. proposed.

Otley.—U.D.C. propose to build 36 houses at Weston-la. estate.

Plymouth.—City A. has prepared plans for sec. mod. sch. at Burleigh-la., Peverell.

Scarborough.—Boro' E., H. V. Overfield, has reported on the condition of the West Pier owing to subsidence, and it is proposed to spend £37,000 on repairs.

Sheffield.—T.C. to lease site at Carlisle-st. and Sorby-st. to Davenport Bros. & Co., Ltd., for erection of new factory; propose 11 temporary single-storey shops at King-st., £29,175 est.

South Shields.—Plans have been approved for four-storey premises at Market-pla., for Allen & Co., (South Shields), Ltd., which is part of a redevelopment scheme for war damage at the site. Architects are S. W. Milburn & Partners, 9, Esplanade, Sunderland.

Stafford.—Warkin, Willis & Cooper, Burslem, nr. Stoke-on-Trent, are architects to R.D.C. for conversions at premises, Wheaton Aston Camp, to provide dwellings for 166 families.

Stockport.—B.C. propose new fire brigade headquarters off Heaton-la.

Stretford.—B.C. approved plans for transport depot at Trafford Park-rd., for Road Haulage Executive; office block at Christie-rd., for Craigielea Joinery Co., Ltd.; and reconstruction and extensions to factory at Westinghouse-rd., for British Oxygen Co., Ltd.

Stretford.—Erection of St. Hilda's C.E. sch. proposed in 1952 programme. Architects are Thorpe & Whyman, Oldham.

Sunderland.—Bristol Aircraft Co., Ltd., Bristol, are to build a factory at Pallion, for making jet engines.

Surrey.—C.C. propose extensions to sec. sch., Egham, £59,230; cty. prim., Ash, £44,506; and county prim. sch. at Ashtead, £30,870.

Tipton.—B.C. propose 28 flats at Factory-rd.

Tyldesley.—U.D.C. to lease site at Shakerley estate to Manchester & District Brewers' Society for erection of new hotel.

Tynemouth.—T.C. has been advised by its consultant, Dr. Charles Holden, to develop the east end of the borough by erection of five-storey flats. The cost of 21 blocks would be £641,044, and provides for 411 dwellings. Dr. Holden has also advised the construction of three-storey terrace-houses on land west at Howard -st.

Washington.—Ministry approval has been given to U.D.C. for layout plans of houses at Oxford-ave. and Blue House-la.

West Bromwich.—Riley & Davies, 24, Willraham-rd., Walsall, are architects for proposed showrooms, offices and stores at Walsall-rd.

Westhoughton.—U.D.C. to build four shops and four maisonettes.

West Lancs.—R.D.C. to erect 12 bungalows and four flats at Town Green-la. site.

Wigan.—T.C. approved plans for extensions to stadium at Woodhouse-la., for Wigan Greyhound Racing & Sports Stadium, Ltd.; received approval for erection of 20 police houses on various sites, and to engage quantity surveyor for erection of occupation centre at Scot-la.

Wigan.—B.C. to build 175 dwellings at Smethurst-la.

Workington.—B.C. approved layout for 38 houses at Moss Bay-rd., and proposed Trunk Road North side estate, and 50 houses at Saltergate.

Worksop.—B.C. propose extensions to town hall, at est. cost of £60,000.

Wrexham.—B.C. to build 301 dwellings at Queen's Park estate.

TENDERS

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.
¶ Denotes *accepted by H.M. Government Departments*.

Aberdeen.—38 Dunedin-type houses for Housing Com.: *A. Hall & Son, Ltd., Aberdeen, £51,268.

Bolton.—Erection of High Lawn C.P. sch., for E.C.: *E. J. Tyson, Ltd., Bolton, £38,689.

Bradford.—Erection of wash-house and slipper baths, for B.C.: *Thos. Obank & Sons, Ltd., Thackley, Bradford, £51,375.

Bridgnorth.—Erection of houses at Worfield, for R.D.C.: *Wm. Sharratt, Ltd., Church-la., Wolverhampton, £16,630.

Carlisle.—14 houses at Harraby estate, for T.C.: *A. S. Nixon, Ltd., 83, Lowther-st., Carlisle, £18,042.

Clay Cross.—28 houses at Holmgate, for U.D.C.: *J. Adlington, Ltd., Clay Cross, £38,114.

Dukinfield.—Erection of hostel at Yew Tree-la., for Cheshire C.C.: *B. Armitage, Stockport-rd., Gee Cross, Hyde, £43,992.

Felling.—46 houses at Ellen Wilkinson estate, for U.D.C.: *Direct Labour.

Goole.—Houses at Western-rd. estate, for B.C.: *Bainbridge (Builders), Doncaster, Ltd., £56,356 (43); and *Platt & Featherstone, Ltd., £31,774 (26).

Greenock.—Hospital ward block for the Investigation into the Function and Design of Hospitals. Director and Architect, Mr. R. Llewelyn Davies, M.A., A.R.I.B.A., 12, Mecklenburgh-sq., London, W.C.1. Consulting engineers, Messrs. Ove Arup and Partners, 8, Fitzroy-st., W.1. Quantity surveyor, Mr. William Ward, F.R.I.C.S., Glasgow. Excavations, concrete and brick work, etc., *Hunter and Clark, Ltd., Glasgow.

Hackney.—Four old peoples' bungalows at Kyverdale-rd., for B.C.:—

Mansfield & Neil, Ltd., 136-138, Minories, E.C.3	£5,225
*J. M. Hill & Sons, Ltd., Heather Park-dr., North Circular-rd., Wembley, Middlesex	5,019
J. & J. Dean, Ltd., Ruckholt Works, Ruckholt-rd., E.10	5,011

Heston and Isleworth.—34 houses at Wellington-rd. South housing estate, for B.C.:—

Troy & Co., Ltd., S.E.1	£60,780
Cranebridge Estates (Whitton), Ltd., Whitton	60,440
K. L. Williams, Ltd., Southall	59,821
A. G. Scott (Builders), Ltd., E.C.4	59,515
Sir Lindsay Parkinson & Co., Ltd., W.C.2	56,857
W. J. Simms, Sons & Cooke, Ltd., W.1	56,552
Gee & Co. (Contractors), Ltd., Hanworth	56,226
E. & L. Berg, Ltd., Esher	55,489
General Housing Co., Ltd., Ealing	54,985
Co-Partner Building Operatives, Ltd., Sunbury-on-Thames	54,020
Lancasters Contractors (London), Ltd., Wembley	50,873
Arthur Watson, Ltd., Hounslow	49,960
The Building & Public Works Construction Co., Ltd., Swindon	49,921
*C. & S. Telling, Sunbury-on-Thames	49,189

Jarrow-on-Tyne.—Repairs and improvements to Jarrow Ellison C.E. sch., for Durham Cty. E.C.: *T. A. Brown & Son, Sunderland-rd., Gateshead, £6,114.

¶London (Admiralty).—Particulars of contracts placed by Civil Engineer-in-Chief's Dept., Admiralty:—

Coventry: Painting workshops, T. H. Kenyon & Sons, Ltd., Chancellors Works, Croxley-rd., London, W.9. *Fleetlands*: Glazing to workshops and buildings, John Hunt, Ltd., South Wharf, Cleveland-rd., Gosport.

¶London (Air Ministry).—Works contracts to the value of £500 or over placed by Directorate of Contracts for week ended November 24:—

Building work: Wm. T. Nicholls, Ltd., Gloucester; Markwell Holmes and Hayter, Hull; Sir Alfred McAlpine & Son, Ltd., Wolverhampton. *General maintenance work*: F. Rendell & Sons, Ltd., Devizes, Wilts; E. E. Coleman, Ltd., Sale, nr. Manchester; John Porter & Son, Skegness; Frank Wood (Wendover), Ltd., Wendover, Bucks; W. and C. French, Ltd., Buckhurst Hill, Essex.

Installation of heating and hot water services: Benham & Sons, Ltd., London, W.1. *Installation of warm air supply plants*: Brightside Foundry and Engineering Co., Ltd., Birmingham. *Painting work*: M. A. Appleton (Cttrs.), Ltd., Wolverhampton; Spraycraft Co., Ltd., Bromley, Kent.

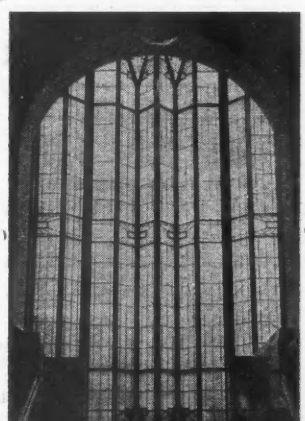
London (British Railways).—New contracts placed by London Midland Region:—Renewal of roof coverings, patent roof-glazing, of Stockport Edgeley carriage shed roof: Henry Hope & Sons, Ltd., Smethwick, Birmingham. Supply and erection of steelwork for roof over platform at Blackpool Central station: *McIntyre & Sons, Ltd., 22, Stanhope-st., Liverpool 8. Removal of existing roof coverings over platforms at Euston station: *The Demolition & Construction Co., Ltd., 3, St. James's-sq., S.W.1. Re-roofing of platforms at Euston station: *Mellowes & Co., Ltd., Corporation-st., Sheffield. Labour for cleaning and painting of bridges (contract No. 2): *J. Arundel (Louth), Ltd., Cornmarket, Louth, Lincs. Reconstruction of decks at Heysham Harbour: *Edward Wood & Sons, Park-st., Derby. Renewal of roof coverings, general building work, over Eldon-st. cartroad at Broad-st. goods station, London: *E. J. Logan (Putney), Ltd., 138b, West-hill, Putney, S.W.15. Re-covering of the station roof patent roof glazing, at Manchester Central: *Faulkner Greene & Co., Ltd., 99-101, Redcross-way, S.E.1. Renewal of the roof coverings of carriage shed at Holyhead: *Thomas Collier & Sons, Ltd., Brown-st. Works, Leigh, Lancs. New roadway and footpath at Carlisle, Kingmoor, motive power depot: *Cleghorn & Co., Ltd., Bankshead, Brampton, Cumberland. Renewal of roof covering, Camden "B" goods shed: *Industrial Engineering, Ltd., Mellierhse., Albemarle-st., E.C.1.

¶London (M.O.W.).—Contracts placed by M.O.W. during weeek ended November 17:—

London: Winfield-hse., Regent's Park, Minor adaptations and repairs, Higgs & Hill, Ltd., Crown Works, South Lambeth-rd., S.W.8. *Essex*: Harlow, Erection of temporary telephone exchange, Thos. Bates & Son, Ltd., Old Brick Works, Harold Wood, Romford.

¶London (War Dept).—Works contracts placed by W.D. for week ended November 17:—

Yorkshire: Road work, W. and J. Glossop, Ltd., York; Miscellaneous, F. Shepherd & Son, Ltd., York; Building work, Samuel Owst & Son, Ltd., Hull; Miscellaneous, W. and J. Glossop, Ltd., York. *Glamorgan*: Building work, Concrete Piling Co., Ltd., Belfast. *Essex*: Building work, J. and R.



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Rooff, Ltd., London, E.13. *Surrey*: Road work, Improved Macadams, Feltham.

London: Roof repairs, Frank Batty and Smith, Ltd., London, W.2; painting, C. and T. Painters, Ltd., London, N.W.10. *Essex*: Painting, Arundel (Contractors), Ltd., Bradford. *Sussex*: Re-turf sports ground, En Tout Cas Co., Ltd., Syston. *Wiltshire*: Building work, Howard Farrow, Ltd., London, N.W.11. *Hampshire*: Building work, T. King & Sons (Bldrs.), Ltd., Abbotts Ann, Hants.

Manchester.—Adaptation of premises at 88, Deansgate, for K.L.M. Airways: *Thos. Scot (Manchester), Ltd., Atherton-st., Manchester; extensions to shop premises at junction of Deansgate and Blackfriars-st., for Montague Burton, Ltd.: *M. Harrison & Co. (Leeds), Ltd.

Manchester.—Erection of factory at Western-rd., for Aldhouse Milnes, Ltd.: *T. Campion & Sons, Ltd., Ardwick, Manchester.

Middlesbrough.—58 houses for T.C.: *J. C. Mitchell (12); *Sweeting & Partner (10); *S. Lowe (10); *E. Lowe (10); *H. Homer (8); and *F. S. Thornton (8).

Middlesbrough.—82 houses for T.C.: *Direct Labour.

Mold.—51 houses at Bromley estate, for U.D.C.: *Dutton & Peters, Ltd., New-st., Mold.

Newcastle-on-Tyne.—Repairs to front of Palace Theatre, Haymarket, Architects are J. W. Taylor & Sons, St. James'-bldgs., Newcastle; *J. Cummings, Matamba-ter., Sunderland.

New Cross.—Shops, maisonettes and 28 flats at New Cross-rd.: *Henry Kent, Ltd., 31, Beacon-rd., S.E.13.

Nottingham.—Five shops at Orford-ave., and five shops at Sandham Walk, Clifton, for T.C.: *Geo. Wimpey & Co., Ltd., London, £45,956.

Nottinghamshire.—Erection of prim. sch. at Greenwood-dr., Kirkby-in-Ashfield: *Greenwoods (Mansfield), Ltd., 2, Wood-st., Mansfield.

Oldham.—Erection of infants' sch. at Fitton Hill estate: *Hills (West Bromwich), Ltd.

Ormskirk.—Erection of Lordsgate C.E. sch.: *J. & R. Woods, Ltd., Burscough.

Sheffield.—12 cubicles with sanitary annexe at Crookhill Sanatorium, for Regional Hospital Board: *H. Arnold & Sons, Ltd., Wheatley Hall-rd., Doncaster, £8,963; and staff houses at Stretton Hall, Oadby: *De Montfort Joinery Works, Ltd., 5, De Montfort-st., Leicester, £9,926.

Stourport.—Erection of sec. mod. sch., for Worcs. C.C.: *T. Vale & Sons, Ltd., Lombard-st., Stourport, £96,127.

Stretford.—Houses and flats at Christie-rd. housing site (east section), for B.C. Scheme 13, eight houses and 20 flats; scheme 14, 10 houses and 20 flats; scheme 15, 16 houses and 16 flats: *Dervis Franklyn, Midland Bank-chbrs., Urmston.

Sunderland.—Erection of 14 memorial homes, community centre and 12 other houses for aged people at Hill View, for T.C. Boro' A. is H. C. Bishop, Grange-hse., Stockton-rd., Sunderland: *George Henderson, East Boldon, Co. Durham, £42,654.

Walthamstow.—12 houses at St. Barnabas-rd., Fairfield-rd., Gloucester-rd., Jewel-rd., and Ravenswood-rd. sites, for B.C.: *Jenners (Builders), Ltd (at a cost of £1,393 per house).

Walthamstow.—10 houses at Oaklands and Maycroft, West-ave., for B.C.: *J. & J. Dean, Ltd. (at cost of £1,493 per house).

Warwick.—28 houses at Stratford-rd. estate, for B.C.: *Wates, Ltd., London, £35,687.

Worthing.—20 houses at Magdale-rd.: *F. Kenton, 61, Loxwood-ave.

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